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DOMESTIC URANIUM MINING AND MILLING

HEARING

BEFORE THE

SUBCOMMITTEE ON NUCLEAR REGULATION

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COMMITTEE ON ENVIRONMENT AND PUBLIC WORKS UNITED STATES SENATE

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DOMESTIC URANIUM MINING AND MILLING

MONDAY, AUGUST 29, 1983

U.S. SENATE,
COMMITTEE ON ENVIRONMENT AND PUBLIC WORKS,
SUBCOMMITTEE ON NUCLEAR REGULATION,
Riverton, Wyo.

The subcommittee met at 9 a.m. in the Little Theater, Central Wyoming College, Hon. Alan K. Simpson (chairman of the subcommittee) presiding.

OPENING STATEMENT OF HON. ALAN K. SIMPSON, U.S. SENATOR FROM THE STATE OF WYOMING

Senator SIMPSON. I apologize very sincerely for being late. I just came from Cody and it is a beautiful morning.

I understand the Governor is not feeling his best. I saw him last week. He very much wanted to be here to participate, because he has the same serious interest in this issue as does the entire Wyoming congressional delegation. One of my principal duties is chairing the Subcommittee on Nuclear Regulation, and this morning we pick up where we never ever left off. Two years ago we had a hearing where we took a most careful look at what was happening in this vitally important industry; and from the testimony presented at that time, it was clear that the industry was in dire straits. Domestic uranium production down, long-term supply commitments fallen off significantly, prices had fallen, and unemployment had reached all-time highs. In light of this Nation's obvious commitment to maintaining a competitive and strong domestic uranium industry, we have a statutory responsibility firmly established in the Domestic Energy Act and the evidence presented in 1981 came as a rude awakening to some who were not familiar with the growing troubles facing the industry.

And yet, even as alarmed as many were in 1981, we have seen over the past 2 years, a constant and steady erosion of the once healthy domestic uranium industry. The figures show an industry clearly facing its most troubled time; domestic production dropped over 30 percent between 1981 and 1982, capital investment in uranium mines and mills has gone from $416 million in 1981 to $166 million in 1982; commercial inventories of uranium continued to rise in 1982 while unfilled requirements through 1990 continued to drop; and U.S. buyers, and this is a most troubling situation, U.S. buyers accelerated the trend toward use of foreign uranium with contracts for foreign uranium tripling in 1982 from 9.8 million pounds in 1981 to 28 million pounds in 1982. Orders of domestic uranium dropped from 53 to 5.5 million pounds in 1982. Finally, of course, we have

the devastating human equation of employment in Wyoming uranium mines standing at a little over 1,200 down from 5,400 in 1980.

What has Congress been doing? What has the subcommittee been doing? I can only tell you that we have made some, I think, significant first steps in the direction of restoring this industry to a position of strength. I urged greater moderation in balance in the regulation of uranium mill tailings. Under the Uranium Mill Tailings Radiation Control Act, together with greater flexibility for States and mill operators to meet Federal standards established by the NRC and EPA. Late last year we succeeded in incorporating these objectives in a law which has now been passed, the NRC Authorization Act. I trust the redirection we provided will provide much needed balance in this area, consistent always with the protection of human health and safety. In that same law, we provided a focus for the Department of Energy's program to assess the strength of the uranium industry, viability; a word I hate. I hate that word. We have derived that now one of those jargon words of Washington. Viability of the uranium industry with the particular attention to growing reliance on imported uranium, and in fact, as a direct result of that, DOE will be conducting a hearing tomorrow in Casper to solicit recommendations on the standards that should be used in assessing the viability of the domestic uranium industry followed by promulgation of standards in an annual report to the residents and the Congress on the condition of the industry.

Finally, after 30 years of sitting on our cans, we have succeeded in passing the very first comprehensive high-level nuclear waste bill. The Nuclear Waste Policy Act of 1982, which I was very proud to cosponsor and scrape for in full committee and on the Senate floor, and without a doubt, that legislation will have a profound effect on the entire uranium industry from mining to disposal by establishing a comprehensive Federal program for waste storage and disposal, and as a result, removes what I think is a major impediment for further reliance on nuclear energy. The only tough part of that will be that nobody wants to take the waste. So we'll go through the struggle of everybody wanting to do something about it but nobody wanting to take the waste into their States.

So those are some important first real steps, I think; but in light of the statistics from 1982, much remains to right this reeling industry. Upon my return to Washington early in September, I will be turning my attention to two of these issues, and that is the radionuclide provision of the Clean Air Act and the nuclear licensing reform legislation, neither of which are destined to bail out the industry in that form or to speed things, just because we think that that is the reason that the industry is in tough shape, but simply to do that because that is the critical thing we must do and still meet the standards of public health and safety.

So our purpose this morning is to hear from those on the front lines of the uranium industry, the people who work day in and day out in the field. Their considerable backgrounds and expertise in the uranium industry has and will continue to be of great value to me, and I look forward to the remarks that will be made this morning as we work toward meeting this Nation's statutory commitment to maintaining a healthy uranium industry.

So with that, I recognize the Governor's representative this morning, Nancy Freudenthal. Pleased to have you here, sorry Ed could not be with us.

STATEMENT OF NANCY FREUDENTHAL, REPRESENTING HON. ED HERSCHLER, GOVERNOR, STATE OF WYOMING

Ms. FREUDENTHAL. Thank you, Senator Simpson. Good morning. Last night the Governor called me on the phone and told me to come and pick his speech up and to tell you two things, first of all, that he is very, very sorry he could not be here today. This issue, as you yourself said, is very important to the Governor. Second, he told me not to tell you, "Good morning. I'm Governor Ed Herschler." You know that he's a lot older than I am and much taller.

Senator SIMPSON. He used to dump speeches on me when I was in the legislature with him.

Ms. FREUDENTHAL. I do appreciate being here today, even as his representative and on his behalf. For the Governor, I want to express the State's appreciation for this opportunity to again discuss our concerns about the viability of the domestic uranium mining and milling industry. The issue is vitally important to Wyoming. As you well know, Wyoming ranks second only to New Mexico in uranium reserves. However, the issue of viability is critically important here in Fremont County. Out of all the jobs lost in the uranium sector caused by slowdown, half of them were in Fremont County alone. I think the people in this community here today can tell you that Wyoming's uranium industry is indeed, it's not good. I would go so far as to say that it's not viable.

We can only hope that this message finds its way to the Department of Energy, to Congress, and to the President for some action. I suspect that you will hear quite a few statistics about production declines and resulting unemployment. Rather than talk about numbers, we have included a chart at the end of the testimony which shows the drastic reduction in production and in employment.

I would like to discuss some numbers, though. In just 1 year, Wyoming's production dropped by one-half to the lowest figure we have seen since 1966. In the past, Wyoming has led the Nation in exploration activity, even leading New Mexico. It was reported that hundreds of drills were operating during the peak assessment periods. Now, a recent mining journal came out and assessed that in 1982, as compared to the hundreds of drills, we have approximately 15. In terms of employment, 4,000 jobs were lost. In just the last few years, from a rural State's perspective, this situation is critical. As a comparison, over 75 percent of all Wyoming's cities and towns have populations less than 4,000 people, the total number of jobs that were lost from the cutbacks in uranium.

When Wyoming first began to experience the declines in production, the Mining Association referred to the condition as a "general belt tightening." Now, I suspect the uranium industry has long forgotten about their belts and is seriously worried about their pants.

Unfortunately, I don't believe that any individual or group can quickly bring about a strong and robust recovery to this situation. In general, nearly everyone would agree that the uranium production de-

clines are the direct result of reactor deferrals or cancellations which have drastically reduced the demand for uranium. The reactor cancellations are due to a number of reasons. Those principally cited include lower load growth, regulatory delays and uncertainties, financial constraints. No one could quickly influence all these factors thereby increasing the demand for uranium. But this does not mean that we are justified in doing nothing. Certainly we can and should address issues more directly under our control and authority which could help ease the problems facing this troubled industry.

As an example, Wyoming laws and policies on uranium mining do not directly affect the demand for uranium. However, we have not hidden behind this as an excuse for doing nothing. In the past few years, and as a direct result from the uranium cutbacks, I believe that we have developed a better State policy on deferring reclamation. This policy allows a mine to leave its pits open so as not to backfill over unrecovered reserves. Therefore, the uranium can be developed when the market recovers.

We are also now reviewing our bonding requirement to insure that the industry does not bear more of a bonding expense than is justified.

Finally, we are trying to develop a better State policy to coordinate Federal and State actions and help relieve the uncertainties and delay in the regulatory process.

Again, none of these State efforts, whether individually or collectively, directly influence the demand for uranium. However, they do help a troubled industry and this is where we are approaching the issue.

I guess we would urge Congress to take this same approach when addressing the uranium problem. As a Congressman and a legal scholar, you know that Government does not need to match the means with the ends by mathematical precision. In fact, some of the Federal actions appear about as precise as doing surgery with a meat ax. To require precision before Congress acts in this area, I believe would lead to total paralysis. Such a result would be particularly discouraging when useful action through import restrictions is possible.

Wyoming would like to continue to stress the need for import restrictions; 2 years ago almost to the day, the Governor appeared in Washington to urge that action. The potential for competition by foreign sources with richer grade ore and lower production cost perpetuates an unstable market for uranium demand and prices.

Foreign uranium production indeed creates a problem. Earlier, as I stated, Wyoming uranium production is at a 16-year low, that is, since 1966. The most recent edition of the American Mining Congress Journal reports that Canada's uranium output in 1982 was at a 20-year high. So, Wyoming is sitting here with a 16-year low and we are reading reports of Canadian production at a 20-year high. From this report I believe no one should suggest that foreign uranium exports do not compete with our domestic reserves.

The domestic uranium producers and the States need as much certainty as possible when trying to forecast recovery. We are both interested in employment and an improved economy. We are also both interested in a sound, long-term Federal policy supporting domestic uranium production.

As you know, more than half of Wyoming's extensive reserves still remain in the ground. We are looking to something again that is a sound, long-term policy.

Finally, we are both interested in large areas of disturbed lands which should either be mined or reclaimed but should not be held on an interim stabilization phase for long periods of time while Congress and States wonder, appear frustrated over the condition. The foreign import question does not need to add another unknown variable to an already complex equation on uranium demand and prices.

In closing, I would again urge action toward a limitation on U.S. uranium imports. We should avoid the paralyzing argument that imports do not directly affect the demand for uranium; rather, from Wyoming's perspective, we would urge that Congress ask what positive action can be taken which is within your authority and which would ease and stabilize the situation. I believe that an import limitation would indeed serve this end.

Thank you on the Governor's behalf for appearing here today and for taking testimony again on this very important subject. And I would be more than happy to answer any questions that you might have.

Senator SIMPSON. Thank you very much, Nancy. We do appreciate the Governor's statement, and I'm fully aware that you may not have full access to the answers to the questions that I have. But one particularly was this, and if you feel you would rather supply an answer for the record that would be fine. When will this record close, Jim? Three weeks. Let me introduce Jim Curtiss who is the staff director and chief counsel of the Subcommittee on Nuclear Regulation and a very capable gentleman indeed. I have come to know personally of his skill.

But the question in this: At some time we will reach the point when domestic uranium operations have been scaled back, and you cite some things that hopefully will restore it. I know those things have taken place, but when domestic uranium operations have been scaled back to such a degree, and if the demand were to increase appreciably, it would be very difficult to bring these mines back on line in time to supply the demand that would be there. Did the Governor feel that we have reached that point yet, and what will be the consequences when we do?

Ms. FREUDENTHAL. I think that we may be closing in on that point. I did some research before we came here today to try to determine out of all of Wyoming mines how many have cutback, slowed down, or ceased production. I got a figure of somewhere in the neighborhood of 11 mines. Now, 20 mines were operational in a peak year of 1978. When you're looking at 11 mines, major producing mines closing down, coming in and requesting stabilization, I think that we're facing a situation where we can't mobilize. Mines begin to flood. A lot of our pits have been proposed as impoundments, and they slowly fill up with water. And you are getting some problems with eventually recovering those reserves. You also have stabilization problems. You see sloughing when you have water running into the pits. We're going to have to take measures that are costly to stabilize mines. I think the Department of Energy has looked at that as an operational capability question, whether or not they can mobilize and recover the reserves at a time when the market recovers. And

from what I hear from producers, one producer has a contract, firm contract which they had to renegotiate. And one of the terms in the renegotiation was that they would be able to meet the contract needs within a 1-year period, and that mine, frankly, said that they did not know that they would be able to meet that year turnaround. So I think that you're clearly looking at 1 year to as much as 3 years to get back in, even where we have stabilized the mines.

Senator SIMPSON. This recently released draft market survey by the Energy Information Administration projects that buyer demand for U.S. uranium will exceed the current reported available supply. I think the date was 1988. They go on to point out that if market conditions improve, they state that additional uranium is likely to be produced. Solid statement. But what particular market conditions does the Governor feel would be necessary before Wyoming uranium miners would be likely to increase production?

Ms. FREUDENTHAL. From the reports that we have from the mines that began closing down, they are looking at the 1990's or later to reopen the mines. They see a market possibility in that period of time, a price in the neighborhood of mid-$30 a pound. I do think, though, that that is reasonably optimistic, especially when you read reports that the—a magazine called Science came out and reported that another DOE estimate on stockpiled uranium indicates that there is enough uranium slopping around in stockpiles to meet world needs for the next 2 to 3 years. And I have to question their 1988 date as a reasonable date for market recovery. That's not at all consistent from what the uranium mines come forward and reflect. And they're being fairly—well, they try to reflect the earliest date, because if it's too far in the future, the State agency gets nervous about how long mines should close down.

Senator SIMPSON. I think that those stockpiling figures are quite startling, actually. The public would be very interested in the stockpiling figures as to what we have:

> Producer's inventories rose to 26.6 million pounds, approximately 90 percent higher than reported in the January 1982 survey. Inventories as of January 1, 1980, there were 180 million pounds compared to 159 million pounds as of January 1, 1982.

Those are extraordinary figures on stockpiling and surely one of the great concerns that we all have. Unless those existing inventories are worked off, the demand is going to remain soft. That I think is a true statement, because it's certainly at an all-time high now.

Well, you've shared with us the Governor's great concern about imports and certainly that imported uranium issue is not stabilized. Senator Pete Domenici and I were able to get a provision into the authorization bill that would trigger some activity when it reached, what, 35 percent. I don't know where that figure is, but obviously, there is an increased reliance on foreign uranium.

We'll hear witnesses this morning testify as to the industry's responsibility to itself in that process, which is an interesting concept. But does Ed have anything specific that he would think that the Federal Government should do with regard to this import issue, anything

specifically other than sharing—such as selecting a figure, perhaps, or doing that through GATT or the regular processes of international trade, because even though, I too have been supportive of a form of import restrictions, it does create an obvious chaos in the international market and retribution.

Ms. FREUDENTHAL. I think that if you could keep a good sound flow of information coming to Congress and to the President about the situation. I'm going to be appearing tomorrow to testify on the proposed rules of the Energy Information Administration; and I'm somewhat discouraged about those rules and whether or not they will indeed encourage or whether they will disguise information coming to Congress. I think the viability question, the word—I struggled with this over the weekend, what that word meant; and I'm sympathetic to your dislike for that word. I began to dislike it, too. But I do believe that viability means more than whether or not our uranium producers could meet demand, whether or not it's all a national security question. I think viability also should include the employment cutbacks, the deferred reclamation status, the production declines, some of those might not reach the threshold of impairing national security, and that seems to be the route that EIA has taken, and I guess, from our point of view, we're encouraged about the 1983 amendments to trigger a process. We are encouraged that there will be reports coming to Congress and to the President; but if you could follow through and make sure that those reports contained useful information not just facts or mathematical equations, I think that you—the trigger might sound earlier. Indeed, a problem from which we could not recover, as you've said from which the situation got so dire that we could not come in and reopen those mines.

Senator SIMPSON. Two months after I come to the Senate, I was in a helicopter headed for Three Mile Island, and much has happened since that period of time. But one of the clearest things that I have found is an awesome, in a sense fear that surrounds the industry from those who do not understand milling and mining and production of yellow cake and the fuel cycle activity; and from that fear comes extraordinarily restrictive standards. And that is something that will be discussed tomorrow in Casper, and I believe that you will be there to express the Governor's position, because certainly there is a great lack of understanding, especially with mill tailings and what is really required for the public health and safety. I appreciate very much your sharing the Governor's testimony with us, you are a very efficient and capable person. I know that because I watched you grow up in Cody, Wyo. Tell the Governor that we appreciate it. I will be in close contact with him as we have continually with regard to these issues: and thank you very much.

Ms. FREUDENTHAL. Thank you again, Senator.

Senator SIMPSON. Now, we have our next witness. Albert H. Linden, Jr., the Deputy Administrator of the Energy Information Administration, U.S. Department of Energy. Mr. Linden, please. Nice to have you with us. We appreciate your being in Wyoming to share your information today and tomorrow in Casper with your important work.

STATEMENT OF ALBERT H. LINDEN, JR., DEPUTY ADMINISTRATOR, ENERGY INFORMATION ADMINISTRATION, DEPARTMENT OF ENERGY

Mr. LINDEN. Thank you very much, Mr. Chairman. Good morning. I'm pleased to be here this morning to tell you what the Energy Information Administration's efforts are to assess the viability of the U.S. uranium mining and milling industry. Accompanying me today is Dr. Gene Clark, who is the Director of our Nuclear and Alternate Fuels Division in the Energy Information Administration. The EIA proposes to measure uranium industry viability by examining the capability of the mining and milling industry to supply the needs of the domestic nuclear power industry under a variety of conditions.

The EIA was established with a measure of independence from the policy formulation and advocacy functions of the Department. Therefore, my remarks today will be limited to the current activities that we are doing to address the viability question. I will not focus on policy options.

EIA became involved in the process in April of this year when the Secretary of Energy, Donald Paul Hodel, assigned EIA the responsibility for implementing section 23(b) of Public Law 97–415. That section as the Senator has said, had amended the Atomic Energy Act of 1954 by adding a new section 170B, requiring that the Secretary of Energy monitor and make an annual determination of the viability of the domestic uranium industry.

The EIA has proposed a rule. It was published in the Federal Register on August 12 to assess industry viability based upon three major attributes. These are: resource capability, operational capability, and financial capability. We plan to define indices of these attributes, to collect and analyze data to determine current values, and to estimate the future values under a variety of market conditions. Our resource capability, as we have defined it, measures the extent to which the domestic economic uranium reserves can supply all the domestic needs for a future 10-year period. Secondary criteria that relate to this attribute include domestic utility requirements, imports, exploration, and levels of production and prices.

We have defined the operational capability as the extent to which the domestic uranium production capacity can meet the projected domestic nuclear power needs for a 10-year period. Related secondary criteria in this area are domestic utility requirements, imports, employment and capital investment, and levels of production and prices.

Financial capability is the ability of the domestic uranium industry to obtain adequate funds to finance the level of production defined under operational capability. The related secondary criteria here include supply contracts, domestic utility requirements, imports, exploration, employment, and capital investment, and also levels of production and prices.

I want to emphasize that we have reached no final conclusions. Our current thinking is to determine the status of the industry's viability by comparing these current and projected attributes to minimum values.

To be deemed viable, the values of each of the three attributes for the entire industry must meet the minimum values or be projected to

meet these conditions within 2 years of the time of the assessment. Our methodology for determining viability, however, may be and probably will be modified as a result of the comments that are received during the public comment period of our proposed rulemaking.

There are three major actions in EIA's current viability assessment effort. I would like to briefly discuss those and their timeframes with you this morning.

First, we have issued a proposed rule and a notice of hearings. As I stated earlier, this rule details the methodology which EIA is currently considering to assess industry viability and contains procedures for public hearings and for presenting written comments. To provide ample opportunity for public input, we have scheduled three public hearings. One was held in Washington, D.C., last Friday; the one tomorrow will be held in Casper; and one will be held on September 1 in Albuquerque.

Second, we plan to issue a notice of final rule by October 4, 1983. Of course, this rule will not be finalized until we have reviewed and considered the comments given at the public hearings, and all written comments that are submitted to us within 30 days of the August 12 publication date. By September 12, 1983, all comments should be received.

Third, our current schedule calls for the release of our first annual assessment of viability next spring. As we see it, there is a lot of work to be done prior to the release of this report. Existing EIA data collections need to be modified. Data available from outside sources need to be examined for applicability and utilized as appropriate. New data collection systems may need to be designed and implemented to fill any gaps that we have. Computer models for simulating both the domestic and international uranium markets must be modified and documented.

In conclusion, EIA is at present intensely involved in developing the criteria and methodology to be used in measuring the industry's viability. To do the job efficiently and effectively, we will continue to work with the industry to obtain reliable and accurate information, as well as input as to what our criteria and standards should be. Again, I am pleased to have had the opportunity to be here this morning. I will be glad to answer any questions that you may have. Thank you.

Senator SIMPSON. Thank you very much, Mr. Linden. I do have some questions. Two years ago, and you may refer this to Dr. Clark or answer it as you wish. Two years ago in a report prepared by EIA on the impact of various Federal policies on the uranium market, the agency concluded that the uranium industry was viable and not threatened by potential imports. That was the quote. In the latest survey on the uranium market, you report a tripling of contracts for foreign uranium. Now then, is this industry under these circumstances in your opinion still viable?

Mr. LINDEN. Well, the report that you're referring to—and also the testimony that was given by our administrator, J. Erich Evered—indicated that competition from foreign imports could be potentially the most significant factor that would affect our domestic industry in the future. And I think that study went on to say further that if our domestic industry had reduced its production to somewhere less than 10 million pounds per year, that it would be very difficult to determine that the industry was viable. So we are, at this time, attempting to

quantify "viability." That's the reason for establishing the criteria and working with the industry and working with the public so that we can fairly and accurately set the criteria upon which any judgments by the Secretary and the President will be based.

Senator SIMPSON. I guess what I'm inquiring about is the significance of the tripling of the contracts and what your opinion is on that alone?

Mr. LINDEN. Well, my personal opinion on that, Senator, is that I think there's a very significant impact on the domestic uranium industry. And I think that's an element that we're going to have to look at very, very closely in the assessment process. It is most significant from our perspective.

Senator SIMPSON. In that survey, you examined a number of different factors that have an impact on the uranium industry such things as inventories, which we've talked of, uranium imports, contracting practices. Of all the factors that you have considered there, what relative importance would you or could you attach to each of those in explaining the current state of the uranium industry?

Mr. LINDEN. I don't mean to dodge your question, but one of the purposes of our public hearings is to find out from the industry and from the public what they feel are the important criteria and some values that they would attach, and the relative importance that they would attach to each of these criteria. I have a detailed breakdown that Dr. Clark can go through. He has an illustration, if you'd like, of the three criteria and how they relate to one another and how they relate to the legal criteria that were established in the law, if that would be useful. But really, the purpose of our public hearings is to solicit comments concerning those criteria and concerning the value that should be placed on each of the criteria. We're very openminded and open to comments and suggestions on our proposal at this time.

Senator SIMPSON. Probably some people in here would give you some thoughts on that.

Mr. LINDEN. I hope so, and I hope they do tomorrow and in Albuquerque as well, sir.

Senator SIMPSON. Knowing them as I do, they will. I can assure you.

Mr. LINDEN. All right.

Senator SIMPSON. The Department has always imposed a limit on the amount of foreign uranium that can be enriched for its customers. The limit has gradually risen over the past and now stands at 80 percent, next year for the first time we will see the cap lifted and that will allow utilities to present 100 percent foreign uranium for the Department of Energy for enrichment purposes. At the time that policy was set out in, I think, 1974, the DOE indicated that it would monitor the use of imported uranium and take such measures as it deemed necessary, another quote, to insure that viability of the domestic uranium industry. Have we reached the point, and I know that your hearings will help develop this, but have we reached the point where reexamination of the current enrichment policy would be appropriate in light of the current state of the industry?

Mr. LINDEN. Yes. Well, before I came out here, I kind of figured I'd get a question that dealt with policy, so I did check with our policy officials concerning that question. And they said that, if it's

found that the industry is not viable at some time in the future, they will reexamine the Department's enrichment policy. It is one of several options that we would have available to address the import question. As I am sure you're aware, Senator, there are also two other provisions that were enacted into the law last January that relate to investigations. One is that the Commerce Department can investigate under section 232 of the Trade Expansion Act of 1962; and the other is that there can be an investigation done by the International Trade Commission under section 201 of the Trade Act of 1974. Either of these could result in a recommendation to the President for import restrictions. So I would think the answer to the question is yes, in talking to our officials in the Department, that if it were deemed that the industry was not viable, they would indeed reassess the enrichment policy.

Senator SIMPSON. The things you mention are part of the package that Senator Domenici and I were involved in, that's true.

Mr. LINDEN. Yes, sir.

Mr. SIMPSON. Another aspect of the enrichment issue is, I think, that we see a trend developing because from 1979, through 1981, the percent of foreign uranium presented to DOE for enrichment was right around 10 percent of the total uranium enriched. And now, last year, that figure jumps to over 18 percent. That's the largest hop ever in those figures. Is that sizable increase indicative of a trend? Do you have any preliminary figures for the percentage of foreign uranium DOE has enriched this year?

Mr. LINDEN. First, I don't have any figures on what they have enriched this year; however, I do have table 15 from our marketing survey that, if I could, I'd like to show you. I think it will clearly indicate the trend that you have identified here.

Table 15. Deliveries of Uranium to DOE Enrichment Plants by Domestic Customers

Year	Amount Delivered (Millions of Pounds of Uranium Oxide)			Percent from Foreign Sources	
	U.S. Origin	Foreign Origin	Total	Actual	Allowable
1977	28.5	1.4	29.9	4.7	10
1978	23.9	1.5	25.4	5.9	15
1979	30.9	3.2	34.1	9.4	20
1980	22.3	2.4	24.7	9.7	30
1981	20.1	2.3	22.4	10.3	40
1982	27.1	6.0	33.1	18.1	60
Total, 1977-1982 ...	152.8	16.8	169.6	9.9	29

Source: Assistant Secretary for Nuclear Energy, Oak Ridge Operations Office.

1982 Survey of U.S. Uranium Marketing Activity
Energy Information Administration

Mr. LINDEN. Looking at the table, you can see the percentages that you were talking about. The next to the last column shows the actual percentage from foreign sources in 1977; it was about 4.7 percent, and it went up to 18.1 percent in 1982. And I don't know—Dr. Clark, do you have any further comment you'd like to make concerning 1983?

Dr. CLARK. Again, we don't have information from our enrichment people on what the 1983 figures are, but I think we could safely make the statement that we would expect that percentage to increase on the basis of contracts that are already in place for supplying uranium to domestic utilities. For example, over the next 10-year period, imported uranium is already under contract to supply about 20 percent of the material that would be delivered to DOE. So that, just on the basis of today's contracts, we would expect that to remain high.

Senator SIMPSON. Back to that market survey where we see this tripling of contracts on foreign uranium this year, to me, that is a troublesome figure. That's quite a leap, 9.8 million pounds in 1981 to 28 million pounds in 1982. How do those figures compare with earlier years, and again, isn't there a noticeable trend developing there and what conclusions do you draw with regard to those figures about U.S. buyer preferences for foreign versus domestic uranium?

Mr. LINDEN. First of all, I think we have the charts you're referring to with us, and we could put them on the view graph. But the trend that we see here is also obviously very significant. I would like to point out just a few of the highlights that are on table 1.

Mr. LINDEN. If you look at domestic utilities' 10-year-forward demand, it's declined each year since 1976 in spite of a steady increase in the number of powerplants that are on line over this period of time. I'm sure you're aware that it was common practice in the seventies to forecast about a 7-percent annual growth rate in electric power. Well, last year for the first time I think since World War II, we actually declined almost 2 percent in our electricity use. The current forecast for annual growth through the eighties is for something around 3 percent on the high side if you look at EEI. What we forecast in EIA runs somewhere in the 2- to 4-percent range for electricity growth. Whereas back in the midseventies, it wasn't uncommon at all to see forecasts in the 7-percent area. So that, I think, has an impact on the demand that was set forth in those earlier years for uranium.

Gene, you may want to explain a couple of the other points on that chart that would be of interest.

Dr. CLARK. Let me explain what's on table 1. We went back to the uranium market surveys that the Department of Energy and its predecessors have carried out since about 1968 and computed something that represents, at a given point in time, the sum of all utilities' uranium requirements or demand over the next 10-year period. So you're looking forward 10 years and cumulating the activity over that period. As Mr. Linden pointed out, in spite of increasing numbers of nuclear powerplants coming on line, 10-year-forward cumulative requirements have actually decreased over the period as people's expectations have fallen and reactors have slipped their construction schedules or been canceled.

Domestic contracts, as a percentage of that demand, seem to be fairly stable from about 1977 on. As you can see from the third column on the top half of table 1, the amount of domestic demand under con-

Table 1. Components of Domestic Utility Uranium Demand

a. Components as Percentages of Total Demand

10-Year Period Beginning In	Total Demand (Million lbs of U3O8)	Under Domestic Supply Contracts	Under Import Supply Contracts	Unfilled (not under Supply Contract)
1983	354	52.5%	20.3%	27.2%
1982	369	57.5%	14.4%	28.1%
1981	377	62.9%	8.5%	28.6%
1980	462	65.4%	8.0%	26.6%
1979	535	57.4%	9.7%	32.9%
1978	555	55.9%	9.4%	34.8%
1977	592	53.5%	12.3%	34.2%
1976	609	38.9%	12.3%	48.8%
1975	537	41.9%	10.4%	47.7%

b. Components as Absolute Quantities (Million lbs. of U3O8)

10-Year Period Beginning In	Total Demand (Million lbs. of U3O8)	Under Domestic Supply Contracts	Under Import Supply Contracts	Unfilled (not under Supply Contract)
1983	354	186	72	96
1982	369	212	53	104
1981	377	237	32	108
1980	462	302	37	123
1979	535	307	52	176
1978	555	310	52	193
1977	592	317	73	202
1976	609	237	75	297
1975	537	225	56	256

Source: Successive issues of "Survey of U.S. Uranium Marketing Activity" (U.S. Department of Energy and its predecessor agencies) for the years 1975-1983.

tract with domestic producers peaked in 1980 and 1981 with fairly high numbers. But in terms of percentages, it is still about half of the demand over the next 10-year period.

Import contracts as a percentage of this demand declined from 1975 through about 1980 and then increased in the past 2 years, as you can see here in the fourth column. The fraction of this total demand that's not filled by supply contracts has declined fairly steadily over the years and, over the past 4 years, has been about 27 to 28 percent. So of the 10-year-forward requirements, a little more than a fourth is not contracted for.

The bottom half of table 1 shows the absolute numbers in millions of pounds representing these uranium requirements and contracts. The

important thing to note here is that the absolute quantity of uranium under contract with domestic producers has declined steadily from the late seventies and import contracts, in terms of absolute quantities, are actually at about their 1976 and 1977 levels, although they have been increasing in the past 2 years. So the important features of the chart are in percentage terms. Import contracts are up, but in absolute terms, these are not unprecedented compared to previous times.

Senator SIMPSON. You speak of activity in the domestic reactor fell. I think it comes as rather a surprise to realize that there are 57 nuclear reactors under construction in this country right now. Some of them slowed very seriously by a lack of demand for electrical energy. But principally, the disturbing thing to me is buyer preferences, U.S. buyer preferences for foreign versus domestic uranium.

Dr. CLARK. Let me address that.

Senator SIMPSON. Please.

Dr. CLARK. We have carried out two studies at the Energy Information Administration on precisely this question surveying the utility fuel purchasers on their preferences. The first survey was done in the spring of 1981. In essence, the outcome of that study was that, current contracts aside, the policies in pace in the spring of 1981 indicated that the utilities as a group would commit to no more than about 36 percent of their requirements from foreign sources. There were numerous reasons given for that, such as the security of supply—these types of factors. One year later, we carried out an identical survey to see if things had changed, and we found that in that one year period, the percentage had increased to about 42 percent. So there was an increase, indicating people are becoming less concerned about reliance on foreign uranium. We haven't carried on a similar survey since 1982, but we intend to.

Senator SIMPSON. Yes. And when you have that, if you would submit that to us, please.

Mr. LINDEN. We wouldn't have that available within the next 3 weeks.

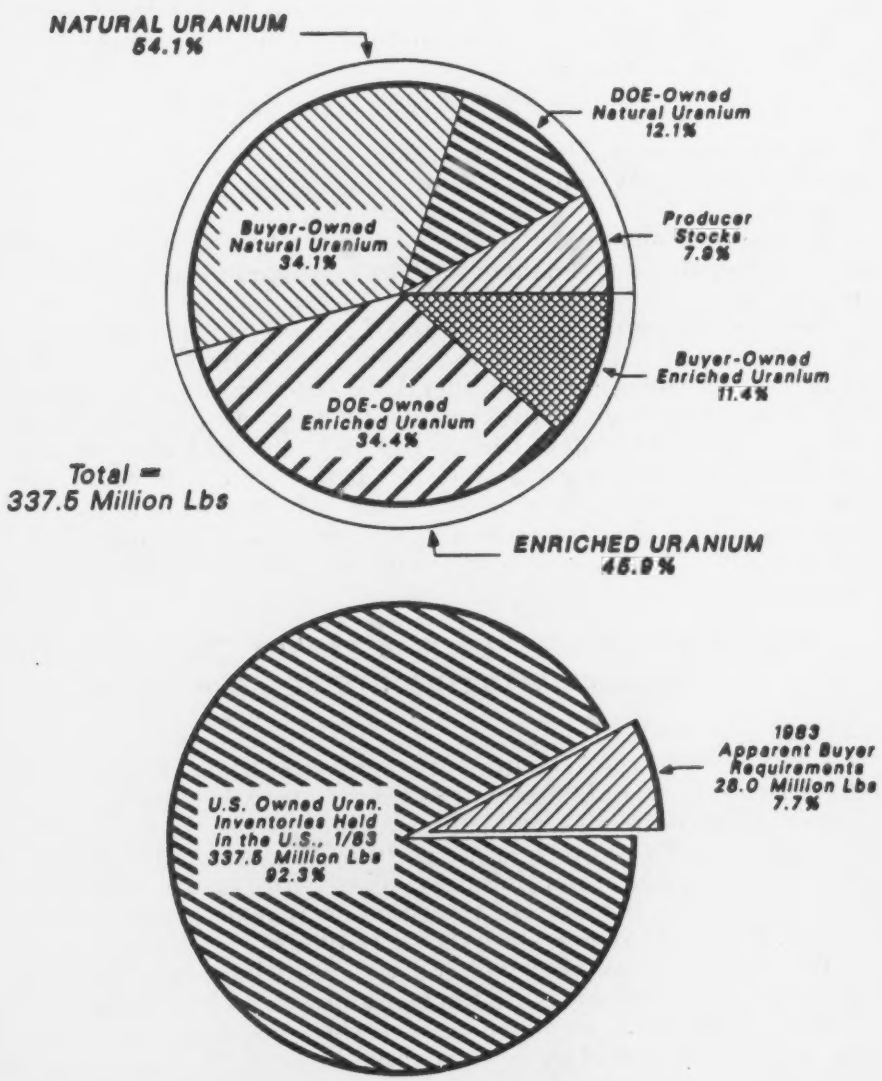
Senator SIMPSON. I'm well aware of that, but if you could have it for the records of the subcommittee, please. Tomorrow, you will be holding a hearing at Casper on the standards to be used in assessing the health of the domestic uranium industry, I wonder if you might share with us whether, as one of those factors to be considered, national self-sufficiency in energy will be included in the list of factors, and if so, what weight likely to be given to that factor?

Mr. LINDEN. OK, if you would let me define national energy self-sufficiency as national nuclear energy security, which is a similar concept, this is an overriding concern in our proposal. We have proposed that it will be included in all of our criteria.

Let me redefine it slightly, instead of saying national energy self-sufficiency, to say national nuclear security—in other words, making sure that we have a secure source. This is an overriding concept in our proposal. We have proposed viability to be, in essence, the domestic uranium industry's capability to meet total domestic nuclear power needs. By implication, this would mean the ability to meet our own needs in the case of a total foreign supply disruption. Under the proposal, a domestic uranium industry that could not do this would not be deemed to be viable. So if you look at the charts we put up, what we are saying is that, if you take the uranium inventory over the period

of time that we are looking at, and if demand could not be met from domestic sources, then the industry would not be deemed to be viable. Now, as was pointed out earlier, I believe, by Nancy Freudenthal, and also in our market survey, if you look at the uranium stockpiles alone, and I think figure 6 indicates that, as you will see, there is about a 10 or 11 year supply on hand to meet current demand by our domestic nuclear power industry.

Figure 6. United States Owned Natural and Enriched Uranium Inventories Held in the U.S. as of January 1, 1983, and Inventories Versus 1983 Requirements



Source: DOE-Owned natural and enriched uranium: Assistant Secretary for Nuclear Energy, Office of Uranium Enrichment Assessment. All other data: Energy Information Administration, Form EIA-401.

Senator SIMPSON. If you could briefly, yes.

Mr. LINDEN. OK. It is shown on the lower half of figure 6.

Dr. CLARK. Let me talk about this chart, too. Figure 6 also includes the Department of Energy's stockpile of uranium. As you can see from the top pie chart the DOE portion represents somewhat less than 50 percent of the uranium that is in stockpile. This includes enriched and unenriched uranium. The sum of all this inventory, as you can see from the bottom pie chart, is about the equivalent of 10 to 11 years, worth of forward requirements in the United States. I understand that the Department of Energy does not propose to use its own stockpile for domestic nuclear power programs, since it has its own military needs for it, but that is still a rather large stockpile.

Senator SIMPSON. Indeed it is. I thank you very much. I hope you have a productive hearing in Casper. You have one in Albuquerque, too. You have had one in Washington; is that not correct?

Mr. LINDEN. Yes, sir.

Senator SIMPSON. I appreciate your participation here today. Thank you both.

Senator SIMPSON. Our next witness is Bill Budd, the executive vice president of the Wyoming Mining Association. Did you just put that together?

Mr. BUDD. Senator, let it never be said that the Wyoming Mining Association did not do their part to perpetuate the great American paper chase.

Senator SIMPSON. Bill Budd and I served together in the legislature. That was a spirited time; wasn't it? Quite a crew, if I recall. Our present Governor, our other U.S. Senator, were all together at that time in the legislature. An interesting part of Wyoming and the way the political system works. But it is nice to have you here this morning, Bill; and I would just say at this time that your organization has furnished me some excellent information, very important material as we deal with all mining issues in Wyoming. And I am appreciative of that very much. You are very accessible and helpful to me.

STATEMENT OF WILLIAM H. BUDD, JR., EXECUTIVE VICE PRESIDENT, WYOMING MINING ASSOCIATION

Mr. BUDD. Mr. Chairman, my name is Bill Budd, and I am executive vice president of the Wyoming Mining Association. Wyoming Mining Association is a trade association representing 70 mining companies, 200 associate companies, and 721 individual members.

I am pleased to have been asked to testify here today on behalf of the beleaguered uranium industry. This industry has been an important part of the economy of the State of Wyoming and most importantly, Fremont County, since the early 1950's.

We sincerely hope that you and your associates in the U.S. Senate will take the information that is being presented here today to Washington, make every effort to remove the constraints from this very important segment of our society. For the balance of my statement, I will attempt to respond to these questions which were posed in your original correspondence with me. And, Senator, since I know that you

are a very accurate and perceptive reader and very effective debator, I would not read the statement to you. I will try to summarize it and leave the reading of the small print up to you.

Senator SIMPSON. Thank you.

Mr. BUDD. The first question, of course, is, "What, in your view, has caused the current depressed condition of the domestic uranium mining and milling industry?" A very simple answer to that question is that the price has dropped below the level of cost to produce the product; and in the great American tradition, when that happens, industry can no longer produce. This has been brought about, I think, for a variety of reasons, some of which have already been mentioned. Perhaps one of our biggest concerns is the lack of Government support at the Federal level, and I am not talking about dollars, Senator Simpson, I am talking about support of things that the industry needs to have to do their job. A duplication of regulation which is very costly at both the State and Federal level has hounded the industry since its inception and since the licensing began for all of the aspects of their operation. Very long time delays in permitting of not only mines and mills, but more importantly, perhaps, powerplants. The provisions which required powerplants to have a 7-year leadtime and their obligations were provided—or gotten by going out and signing contracts with producers. Then through what I am told you will understand very well, the force majeure, is that the proper pronunciation?

Senator SIMPSON. Very good.

Mr. BUDD. Conditions of contract, many of the utilities were able to negate their obligation leaving an industry geared up with many people and to the peak of their capacity and no market for their product. The utilities, I think at that time, many of them began to unload their stockpiles and there was probably as a result of the economic conditions which had them looking at 20-percent money in this State—in this Nation, and an opportunity to reduce some of that debt because their projections for completing their plants were no longer viable, as you say with word. So they dumped a lot of their product on the market at less than market prices which further contributed to the decline of the market.

Your second question, "What steps can be taken by industry, the State, and Federal Government to bring about a strong and robust recovery of this industry?" In my opinion, there's very little that the industry can do to bring about a recovery. The industry must respond to the market conditions, and they had very little to do with setting those standards. Perhaps the industry could do more, Senator, to help educate the public about the nuclear power industry. I think of such things as the publicity from the media on what is often referred to as the Three Mile Island accident. I think we in industry would more correctly view that as an incident. And one that properly orchestrated might have been testimony for the safety of nuclear power rather than a picture of us narrowly averting a catastrophe of major proportions. We would need Government help in trying to do this educational job, because any time any group, whether it be the mining industry or any other group, is trying to provide what might be seen by some as to be self-serving, certainly their testimony will be suspect, so we would need help from people and from the government, perhaps, as a more credible source.

What can the government do? Quite a bit in my mind and in the mind of the industry. We think that the government should actively promote nuclear power. Other industrial nations around the world are going full steam ahead, places such as Japan, West Germany, England, France, we think that our Goverment should perhaps reassess their position in view of these industrial nations that are going full steam ahead. We think it's critical that a cost benefit analysis of all regulations should be a part of the regulating process, both at the Federal and State level.

And I understand you do have a bill before the Congress that will do this, but in our opinion, any time the cost of a regulation cannot be shown to have more benefit to society—excuse me, the benefit to society cannot be more than the cost to the industry, certainly the regulation should not be adopted. Reprocessing plants should be licensed and a workable waste disposal system must be adopted. The technology is available right now. It's been done in other countries, in France, for example, and we think that that is one of the things that perhaps concerns the public and people who are not knowledgeable about nuclear power more than any other issue. And so that's one that we think must be taken care of.

The proposed open ended fee schedule that the NRC is talking about, the cost-plus basis of charging the industry, certainly it is not appropriate at this time. It will do nothing to require frugality on their part and will only increase licensing costs at a time when the industry is already staggering under costs. Delays again must be held to a minimum. Licensing or permitting of mines or mills and powerplants must move ahead with proper dispatch so that we don't end up with the inflationary factor and the cost of money doubling, tripling, or quadrupling your projected costs. We think that the government, both Federal and State, should regulate real areas of public safety only. And that when public input is needed, that the people who are providing that input should be people, and it should be limited to people with demonstrated expertise and the testimony should be confined only to the issue at stake.

I think of the people that I know who are proven experts in this area, Dr. Edward Teller, Dr. Peter Beckman, Dr. Robert Seldon, and in every case, these people support as lifelong nuclear physicist the development of nuclear power and certainly their testimony should carry more weight than the testimony of 50 or 100 or 1,000 members of some organization which carry placards with a cute phrase but have no demonstrated expertise in or understanding of the subject.

Nancy Freudenthal mentioned interim stabilization, which is a term we use here in Wyoming to define the time that the uranium industry must be in a standby status waiting, hopefully, for a market condition which will allow them to go back and produce the rest of the products that's in their unmined mines and pits. We do have that legally established to a point in the State, but I can tell you that my members are concerned and uneasy about that. It's a 1-year, year-by-year process where your permit is reviewed each year. And certainly if any shafts are allowed to or mines refilled with water or have to be reclaimed in total and filled up, almost certainly they will never be gone back into for the low-grade ore that's there. Certainly not in

our lifetime or many lifetimes. So we are very concerned that this legal position of interim stabilization become a very real part of our operation and understood by the government.

Your final question about what relationship is there between a healthy domestic uranium mining and milling industry and import of your uranium from other countries and what steps should be taken, it is a very difficult question for us. And there's been quite a bit of testimony already about the increased imports from 1980 to 1982. The projection on into the future from the New Mexico reports and others would say that it's going to go down both imports and exports, and I suppose that is indicative of what the industry is facing. Certainly Canada and Australia have very large reserves of high grade ore, which means that they can sell that possibly at a cheaper price than we can sell it. When you are getting, I do not know, 8 or 10 or 12 pounds or perhaps more of uranium 308 from a ton of ore as compared to our miners which are maybe getting 1 pound or less, the costs are the same for each, it does not take a great mathematician to understand that they are going to be able to sell it cheaper than we can sell it.

Certainly the uranium industry and the Mining Association support the concept of free trade, and we are very hesitant to recommend import restrictions and so I can see your mind and your wheels turning and can almost anticipate your question of "What, are you saying?" I do not know exactly what we are saying, Senator Simpson, with regard to imports. You have much more information available. We do believe in the free enterprise system. We do believe in free trade, but we also believe that the uranium, the nuclear power industry is a very vital part of this country's future, our very survival depends on it, and should we become totally dependent on foreign sources for the feed to our powerplants, we do not need to expand upon that to see the problems that it will create. So we are concerned with the ability to compete in the world market. The one thing that I think this country has that no other country has which makes any industry have a better chance to sell on the world market is the stability of our Government. Many countries would rather deal with us and sign long-term contracts because we have a stable Government, I hope. And that is on our side.

As already has been referred to back in about 1977, the former Atomic Commission, NRC now, began a policy of restricting imports and reducing that restrictions each year and going to next year will be the 100 percent allowed. I referred in my statement to 37½ and I heard you correct that this morning and say 35 percent, when we reach that, because of Senator Domenici's and your actions, we will trigger a study by the Federal Government. However, we do not really know what will happen beyond that point other than a study. I think that it behooves you and the other Members of your Congress in Washington, and I know that you will, to be very careful to protect the security and economic health of our Nation and certainly the viability, as you use the term, of the nuclear power industry has an important part in that security and economic health.

Thank you for allowing me to talk to you and if I can answer any questions, I will try. If not, there are many people more knowledgeable about the industry here in the audience than myself.

Senator SIMPSON. Well, thanks, Bill. That is very helpful. And I appreciate that. Let me ask—your 37½-percent figure, that is correct. You are correct.

Mr. BUDD. That is probably the first time I have ever been correct in a discussion with you; isn't it?

Senator SIMPSON. No. I recall lots of other little debates on the floor of the House, struggles, sometimes, but always you are a spirited proponent of your position, and I always enjoyed that. Let me ask you, because we are coming to this issue of the Uranium Mill Tailings Radiation Control Act, and EPA is currently in the process of establishing those regulatory standards for stabilization and disposal under the act and for emission of radionuclides from underground uranium mines under the Clean Air Act, I would appreciate it if you could comment as you wish on each of those regulatory activities and in particular what you see as the additional protection of the public health and safety that will result from each one of those.

Mr. BUDD. Senator Simpson, I would like to comment on one phase of that and then I would ask perhaps that you have Mr. Ritchie and Mr. Wilson following me, both are chief executive officers and presidents of their company, and certainly Ian has been in the business since its inception here, and I would yield most of that to his expertise. I do have a letter that I intend to deliver to you after this hearing from one of our operators here in the county which addresses part of the problem that you talk about and that is that the requirement that tailing ponds, for example, have to be lined with a plastic liner and guaranteed that there can never be any contamination. This person has a letter which he has given to me and I asked his permission to pass on to you in which the people who do the regulating at the Federal level have told him that they wish that law was not on the books, because there are certainly cases and many out here where that is not needed. It is a tremendous additional cost and even though you might put that liner in there, there is no way that you can guarantee that something won't break it and you will still get some contamination into the soil.

But this contamination, I think the experts agree, is very minimal and in most cases does not represent a danger. And the water table in some of the areas where we mine, it just isn't a problem. And so there—many times we're dealing with regulations and we're going to the agency and asking that a regulation be changed. In this instance, apparently the law must be changed and the agency has indicated to this man, as you will see in the letter, and I urge you to contact him for further discussion when I pass this to you, that the law must be changed to allow the agency flexibility in this particular area. And for the other part of it I would prefer to yield to Mr. Ritchie when he comes on.

Senator SIMPSON. OK. I do have some questions on what that will mean in the aspect of costs on those proposed standards and what form of control technology might be required and whether that is available and I will ask that of the panel members.

Mr. BUDD. As you are aware, of course, I represent the association and we are rather tightly constrained when we meet as a group to discuss costs or anything that has to do with costs and marketability

under the Federal provision. That could be misconstrued as collusion, therefore prices or marketability or costs, aren't discussed in meetings with each other.

Senator SIMPSON. If the proposed EPA standard is adopted, are there uranium mines that are likely to cutback or suspend altogether uranium mining operations rather than put the expense of complying with the standards as you see it?

Mr. BUDD. Senator, I can't answer that question directly. I think that the answer to that with regard to any segment of the mining industry, and I don't intend to be flippant or not serious, is that when the costs rise to the point where they can no longer produce the product, they will probably have to produce until they have satisfied their current obligations under contracts, but they certainly will not sign any new contracts at a price that is less than their cost to produce. So anything that adds to the cost is going to have a bearing on how long they stay in the business, and certainly anything that adds to the cost that is not justified for the safety of the—and welfare of the public, doesn't make any sense to me. So I'm not trying to evade your question, I don't know the answer to it.

Senator SIMPSON. From the testimony, at least, it would indicate that you're saying that the industry in Wyoming would not pass the viability standard which is established in the Atomic Energy Act. If I could ask how much of this do you attribute to the current depressed state of the nuclear market in general including the large inventories, the other things we've discussed, and how much of it is caused, do you think, by such things as the imported uranium and Federal regulatory programs such as the two we just commented on, if you can?

Mr. BUDD. Al, I don't know how to divide that out. I really don't. It's kind of with me, it's kind of a chicken and egg question, which precipitated and which was first and which was last, I don't know. I'm sorry. I can't answer that.

Senator SIMPSON. Let me ask you this then, to the extent that foreign uranium is the cause of some of the industry's current ills, is it too late to turn this trend around, or are we essentially locked into this trend as a result of long-term contracts that have already been entered into?

Mr. BUDD. Again, the gentlemen who follow me will have more knowledge about long-term contracts, but my perception would be that they're not locked in and that the companies have begun to extricate themselves from those long-term obligation without some kind of an overriding clause that will allow them the flexibility to escalate their prices or whatever they have to do to stay competitive; and consequently, they're not writing any contracts because of the foreign competition and cost of producing our ore and the stockpiles and the things that have already been talked about.

So I don't know of any new major contracts. I don't think any producer in the State of Wyoming produces to sell to the spot market. They can't do it. I don't think. That's my understanding and what they've told me. So they need viable, long-term contracts. And as I've already indicated, they thought they had those a few years ago when

following the Arab embargo and everybody was scurrying around to find new sources of energy and many companies entered into long-term contracts that they thought were valid and geared up and went full board ahead only to find out that they didn't have a market. It was very damaging as has already been testified to.

Senator SIMPSON. One final question, aside from capping the amount of foreign uranium that could be enriched in this country, do you have any other suggestions that you might have for making the domestic uranium industry more competitive with the richer foreign uranium. The figure you stated is quite extraordinary, seven to eight pounds per ton from the sources.

Mr. BUDD. I think it's even higher than that. I said that to be safe, but it's some—I've heard that the uranium production in Canada approaches 20 pounds. Am I totally off or right? And we're producing in many instances ten-hundredths or less or five-hundredths which may be 1 pound, so it is an extreme difference.

Senator SIMPSON. Is there any other discussion you might share?

Mr. BUDD. Well, I guess all I would say, and this kind of comes from my heart, it has to do with not only the industry but this country. Certainly the Government of our country is a powerful influence in world politics all over the world. And I would hope that without perhaps hard and fast import restrictions, our Government could use their influence and some good old horse trading to require that we do some things for other governments and they do some for us, and in that way protect and guard this industry and our necessity for having a viable domestic source of uranium. Maybe that's not possible, I don't know. But it seems to me that we certainly have a lot of clout in a lot of areas in the world, and if it were handled in a proper way, we could guarantee that we could sell more of your product.

Senator SIMPSON. Let me tell you the tough part, legislating, especially when you get into import restrictions. Representing the remarkable people in this State who I've lived among all my life, they want to open the markets in so many areas, agricultural markets, coal markets, cattle, beef, so many products, and yet when you do it in one area, they're going to do a number on you in another. And that's the hideous reality of any kind of import restriction. I know when Pete Domenici and I were proposing this, Bill Brock, who is a very bright person and a Federal trade representative of this country, he said "You know, my heart wants to do that. But I know where it leads." And where it leads is right back to the pocketbook of Wyoming in another area. That is the dastardly part of it and the reality of it. I really thank you, Bill, for your testimony. Very helpful to us as always.

[Off the record briefly.]

Senator SIMPSON. This capable reporter is Tina Brilz. Thank you. You're a very efficient lady.

OK. Now we will have the panel to conclude the activities, and we have Jim Wilson, the president of Rocky Mountain Energy; Ian Ritchie, the president of Pathfinder Mines Corp.; Fred Groth, the president of Cherokee Exploration, Inc.; and C. R. Moore, president of Getty Minerals Marketing.

Well, it's good to have you all here, and why don't you just proceed in the order on the agenda and share with us your thoughts. Jim.

STATEMENT OF JIM WILSON, PRESIDENT, ROCKY MOUNTAIN ENERGY

Mr. WILSON. Mr. Chairman, I am Jim Wilson, president of Rocky Mountain Energy; and we're very much involved in the uranium business and thus concerned about the issues that you've raised at this hearing today. We've touched on a number of things in our written testimony, not all of which I will elaborate on here today, but among those, of course, we've attempted to trace the origins of some of the problems that we're here discussing today. We've commented on the regulatory environment and how that does affect costs. We've also included in it some comment on certain of the new—the new permitting and licensing standards with respect to the ground water and soil radiation standards. And it's a question that you addressed a short time ago; and it's a matter of considerable concern to us that the newly evolving data with respect to the guidelines for establishing those standards be used and be used effectively and wisely, because we've overkilled so often in this area of control, regulatory control of this important business.

The thing that is of greatest concern to us all, though, because we're slumped down in it is this notion of viability. And our written statement also carries this and that's what I would like to spend just a few minutes now talking about a bit more about. As you suggested, it is not one of those things that's easy to define. It sounds easy, but I think it—it may be somewhat like I suppose was the frame of mind of John Elway the other night about midway through the 4th quarter in the game against the Vikings. He couldn't probably define the nonviability he was experiencing, but he could damn well know it was a nonviable situation. You know, you see it—you know it when you see it. It's one of those things.

The idea that the industry is really the domestic industry is really on its backside now with the employment down, production sharply curtailed over its recent accomplishments, what this means simply is that the incentive to continue an active exploration and development process is just greatly limited. The financial resources aren't there. The industry responds in a very realistic way to a curtailment of the kind of cash flow that's needed to keep an industry in shape, so to speak.

We've talked a lot about the 1980–83 period, both with respect to the decline and what brought us to it. The thing that I would like to emphasize again is the backdrop of declining power use that we've mentioned, cnacellation of nuclear reactors and all. That there was during this period a policy, the framework that worked against the industry, and it was a policy framework that had to do with enrichment regulations imposed upon the utilities that created certain buying practices on their part that tended to exaggerate the demand for uranium leading up to, say, 1980, whih policy was then reversed and it suddenly created an enormous perception of surplus inventories in the hands of utilities. And being wise individuals, shrewd financial executives, they stopped their purchasing program. As a matter of fact, the market from the standpoint of utilities participating in it, disappeared. The only market, basically, that remained was the utili-

ties trading with each other, sort of swapping inventories. Well, of course, that lead to virtually the shutdown of the domestic uranium mining and milling business.

At that time, we all puzzled about the future, and it was at that time that you and your colleagues began to raise the question of what is our future in this business. Will we recover? What will it take for the industry to recover. And I think that it's important for us to remember that at that time imports played a relatively small role in this business. And it was very difficult to point to excessive foreign supplies as, let's say, the reason for the plight of the industry. And on the other hand, the utility industry we could expect to come back into the marketplace, because as has been observed here earlier, a very large fraction of their long-term requirements were as yet uncontracted, unfilled. This phenomenon when coupled with the notion that significant new foreign supplies were about to emerge on the scene, many of us thought colored the decision making process so heavily in the utility industry, that the kind of legislation that you and Senator Domenici proposed was absolutely essential. We thought as you did, an absolute limitation in the wisdom of the Senate in a fiery debate on the floor of that New Year's Eve, was that, Christmas Eve? Some harrowing moment. It was decided that the 37½-percent trigger number would be adequate. And this is what we're engaged in now with the hearing tomorrow and the process that DOE is presently engaged in.

We're encouraged by what we've heard today and what we've heard in private discussions with Dr. Clark and others in DOE about the intent, the approach to the study. But at the same time, we have a concern and it has to do with, again, the notion of viability and whether or not these studies can and will be, you know, taken in just the broadest possible context of our economy and this industry and its role in backing up the nuclear utility industry.

As a result, we have, many of us in the business, have turned to a very respected consulting firm, National Economic Research Associates, and asked them to, from the perspective of their understanding of the inside workings of our economy and the role of electric power, critical role of electric power in that, to take a look at this question of viability from perhaps a unique perspective. And it is our intention that the work that they're presently engaged in will be supplied to the Energy Information Agency as input to its present rulemaking. We had hoped to have some results to incorporate today in our written testimony. Those results will only be available in the next week or so, and so we would hope to be able to supplement our testimony today with some of the information that they'll present.

What is it going to focus on? Let me take just a minute by way of concluding what that study is going to focus on and how we view this viability question. The viability notion is certainly not a product of group of balance sheet ratios or not an industry P&L kind of condition statement; that I think we all agree. But in looking at historical data, its very difficult to abstract from that kind of notion. Instead, we think it is, as has been suggested earlier, a mater of what happens to the economy in the event we become overly dependent and there is a disruption of foreign supply. That cost to the economy and the response time on the part of the domestic industry to meet in an

emergency situation those needs we think, are the ultimate measure of viability and we would hope that the data coming out of these studies would put a very solid frame on that 37½ percent and maybe even cause you and your associates to reconsider the number.

Senator SIMPSON. Thank you very much. I appreciate that, and we will be looking closely at that. Mr. Ian Ritchie, please.

STATEMENT OF IAN RITCHIE, PRESIDENT, PATHFINDER MINES CORP.

Mr. RITCHIE. Mr. Chairman, my name is Ian Ritchie. I am the president of Pathfinder Mines Corp. Pathfinder owns and operates three uranium mines and two uranium mills all of which are located in Wyoming. Additionally, we engage in worldwide exploration and uranium marketing efforts. Pathfinder and its corporate predecessors have been engaged in the uranium business since approximately 1957. Eighty percent of our stock is beneficially owned by a French corporation commonly known as Cogema. The remaining 20 percent is owned by General Electric Co.

I have personally been involved in uranium mining and milling for over 25 years, 12 of which were spent here as a resident in Wyoming.

There is no question that the domestic uranium mining and milling industry is depressed. Since 1979, the spot market price for uranium has fallen in terms of 1983 dollars from approximately $70 a pound to a low of $17 before rising slightly to around $24 currently. The numerous layoffs and mine closures which have occurred are well known. Industrywide, employment in our uranium segment has fallen in the last 5 years from approximately 15,100 to under 4,000. In Wyoming, the employment level has dropped from a peak of approximately 5,500 in 1980 to less than 1,300 presently. Approximately 40 percent of those are employed by Pathfinder.

It is thus very appropriate that the first question being considered here is what has caused the current depressed condition of the industry. There are a number of factors which in my mind have converged to create the current situation. Basically, however, the present situation is a result of a rapid decline in demand without an offsetting decline in supply.

Demand has fallen because many utilities have cancelled or significantly delayed plans to construct new nuclear powerplants. The reasons for such cancellation are numerous and include a decrease in predicted demand for electricity, increased plant construction costs, uncertainties created by excessive Government regulation of nuclear powerplants, numerous delays in the licensing process, and adverse public opinion which was accentuated by the Three Mile Island incident.

All these factors seemed to take effect at nearly the same time and the result was a very abrupt, generally unforeseen decline in demand. The effect of the decline was magnified because it came at a time when the domestic uranium industry was rapidly expanding. This was primarily because prevailing and predicted uranium price levels during the mid and late 1970's attracted many new companies into the industry. Exploration efforts were intensified. New mills were con-

structed and mines opened. Very large low cost deposits were also discovered and developed during this time in Australia and Canada.

Further contributing to the decline was the sale by our utilities of excess uranium supplies. Because prices were rising and supply was limited during the mid and late 1970's, many utilities increased inventories and made large contractual commitments for future uranium. When those utilities cancelled or delayed plans to construct new nuclear powerplants, all needed cash but did not wish to borrow during periods of high interest rates, some began selling their uranium inventories, thus further increasing the available supply at the same time that demand was rapidly falling.

Government action has also contributed to the current state of the industry. First as previously noted, the burgeoning and increasingly tenacious morass of Government regulation applicable to nuclear powerplants has deterred many utilities from undertaking new nuclear projects. The increasing delays and uncertainties involved in obtaining necessary construction and operating permits with the accompanying cost increases has made many utilities unwilling to take the risks involved.

Government uranium enrichment contracting policies have also been a factor. As many here today are aware, uranium concentrate must be enriched before it is utilized as a fuel in a nuclear powerplant. Domestically only the Federal Government performs such enrichment work. During the mid 1970's, utilities were required to sign a 10 year fixed commitment contract for enrichment services. As its name implies, that contract required utilities to fix the amount of enrichment work to be performed during a 10 year period. Faced with such a contract, utilities attempted to buy enough uranium to cover their 10 year enrichment requirement. This increased demand and prices and contributed to the rapid supply increase.

Additionally, Government regulations during that time limited the amount of foreign uranium which could be enriched in the United States. This caused nearly all utilities to seek domestic uranium and made the over supply worse.

In short, the present state of the industry is largely the result of an imbalance in supply and demand which stems from a convergence of all the factors that I have described.

Having reviewed what I believe are the causes for why we are where we are, I would like to discuss the actions which I believe the Federal and State governments as well as the uranium industry might undertake in an effort to improve the condition.

Looking at the demand side, Federal and State governments must act to create an environment conducive to the growth of nuclear power in the United States. One important step in that direction would be to streamline the procedures for licensing new plants in order to mitigate delays and remove uncertainties utilities now face in the licensing process. At present, both a construction license and an operating license must be obtained. Combining this two tier licensing process into one could eliminate considerable delay. Overly stringent Federal—overly stringent and unnecessary regulation must be eliminated. Additionally, the Federal Government must move ahead vigor-

ously and promptly with its nuclear waste disposal program and States must cooperate in that effort.

State public utility commissions should adopt a more realistic view in rate making matters and allow utilities to include in their rate base construction costs for plants as they accrue rather than forcing the utility to await commencement of operation of a plant. Also, nuclear plant siting decisions must be expedited.

Turning to the supply side, Federal and State governments can eliminate what I perceive to be a considerable amount of over regulation on the mining and milling industry. For instance, the Federal Environmental Protection Administration recently proposed standards for the reclamation of tailing sites. Despite lack of scientific evidence indicating that radiation from tailings presents any significant health hazards, the standard as proposed by the EPA would in effect require that tailings be covered by approximately 10 feet of soil and rock. The cost of complying with such a standard is enormous, while the benefits appear to be minimal or nonexistent.

A further example is the new licensing fee schedule proposed by the NRC. There is no upper limit on the fees which the NRC can charge operators for new licenses or license renewals. This gives the NRC staff little incentive to expedite licensing.

Still another example is the amount of financial security which producers are required to post within the State environmental agencies as security for performance of reclamation work. In Wyoming the amount of such security is presently almost $1 billion. The cost to our industry for providing such security is very high. A reasonable alternative in many instances would be to allow companies to self-bond for such reclamation obligations.

Senator SIMPSON. Mr. Ritchie, I don't mean to be rude. I've given you over the 10 minutes allotted time. We do have some questions; I have to be over at Shoshoni at a certain hour. Could you summarize. Your entire statement will be part of the record, of course, if you would, please.

Mr. RITCHIE. OK.

Senator SIMPSON. Thank you very much. You're very considerate.

Mr. RITCHIE. I think the last point that I would like to emphasize this morning is that the uranium industry is international in scope. If present projections are accurate, the demand for uranium by overseas utilities will become an increasingly important marketing factor in the coming years. In fact, within the last several days, Pathfinder has reached agreement with one of its customers in the Far East which will significantly extend our commercial relationship. In view of the increasing importance of the international market, we believe that any steps taken to improve conditions within our industry should be aimed at making the industry competitive with the foreign uranium suppliers in both domestic and international markets.

Measures designed only to protect the domestic industry from foreign competition within the United States, such as tariffs or embargoes on foreign uranium, could prove to be counterproductive. Domestic producers unquestionably face stiff competition from foreign producers. It is a fact that foreign reserves are generally higher grade

than those found in the United States. We do, however, have some advantages over foreign competitors. We have a better intrastructure to support our mining operations and we tend to have a better reputation for reliability of supply.

I will conclude with that point, Senator.

Senator SIMPSON. Thank you very much. You're very considerate. Thank you. Mr. Fred Groth.

STATEMENT OF FREDERICK A. GROTH, PRESIDENT, CHEROKEE EXPLORATION, INC.

Mr. GROTH. I'm Fred Groth, and I am with Cherokee Exploration, an independent uranium company. And our big thing is we want to break into this glorious business that we are talking about. We are on our way in.

The uranium industry has experienced two production cycles which herein are referred to as the AEC cycle and the first nuclear power cycle. Other than the fact that production in prices went up and down through these cycles, they bear little resemblance to ordinary commodity cycles.

In the AEC cycle, the market drive was supplied artifically by government needs for weaponry. The price in quantities were more or less arbitrarily determined by the government. When military requirements were met, the market was withdrawn and the industry collapsed. Unfortunately, little valid economic data on market and price response of the industry was obtained during this period. Data of this kind would have been helpful in succeeding cycles.

In the nuclear power cycle, plans for commercial nuclear reactors for power generation ballooned in the 1960's and 1970's and projections of worldwide uranium requirements far exceeded the known assured supply. When no near-term balance appeared likely between supply and demand, the market drive reverted to fear and greed and uranium prices rose to unreasonable levels as buyers competed for available supply. The first nuclear power cycle triggered monumental exploration and development efforts in this country and around the world. The result of these efforts for the most part in this country was the discovery of normally marginal to noneconomic deposits, many of the deposits required high rates of production and/or high market prices to be economic. These deposits represented a large part of the current U.S. economic reserve.

As the early projections for nuclear power were not realized, uranium requirements dropped drastically. The uranium industry again collapsed beginning in 1979 with an excess of marginal to noneconomic reserves, excess production capacity, and large inventories. The market drive had now reverted. It was now driven by greed and fear and uranium buyers now were to have their way in the market.

Worst of all the problems of the present uranium market is the effect of inventory overhang from previous production. Excess production capacity could be and was shutdown as contracts expired, but much of the accumulated inventory had been produced earlier at lower prices and was situated in weak nuclear power programs. Since this inventory began migrating into stronger nuclear power programs at

prices which bore no effect of then-current production costs. As inventory spot sales increased, the uranium market became a two-tiered one; the spot market and the primary market. The present difference in prices is dramatic. In the spot market or secondary market, uranium is currently quoted at about $23 per pound. In the primary market, comprised of uranium sold under long-term contracts with producers and reflecting current production costs, the current average delivered price is $32 to $34 per pound. Disparities in these prices in the past 2 years has at times been even greater.

Prior to the two-tiered market, foreign imports were not a significant factor in the U.S. uranium market. As the spot market price dropped below the marginal cost of production of U.S. producers, the market began being filled with foreign imports, mainly Canadian. Imports reached 83 percent of new domestic purchases in 1981 and again 83 percent in the first half of 1982. Interestingly, from my experience at least in this market, the future imports in general are not at the current low spot price. A mechanism that's commonly used by foreign low-cost producers for future uranium delivery at the then-current market price with a floor price approximating the spot price at the time of contracting. The imported uranium for the most part delivered in 1976, 1988, whenever, will be no cheaper than what the domestic industry would produce the uranium for at the time of delivery.

The net result of collapse of the uranium market following the first nuclear power cycle is that the uranium industry is now what I choose to call dead-ended. Industry capital is largely tied up in marginal to noneconomic deposits and marginal to noncompetitive plants and mines. No profit is being generated to finance exploration and development. Industry and investment capital has fled, leaving only those who have competitive deposits and those who cannot recover their invested capital from marginal operations.

A strong and robust uranium industry cannot be achieved by returning marginal or noneconomic operations to production through artificial market manipulation. To do so would only complicate an already difficult situation. The most significant deficiency in my mind of the present industry is the virtual, total demise of uranium exploration. The only way deterioration of the uranium industry can be stopped in the long run is through the discovery and timely development of new economically competitive deposits. That this can be achieved is not an unreasonable expectation; the continental U.S. possesses a varied and promising geologic terrain and has not reached a mature state of exploration. The discovery of the Crawford, Nebr., and Marline, Va., deposits in the past few years bears this out. The question is, "Between industry and government, how can the industry be turned around?" This country cannot afford a dead-ended uranium industry, but no one is currently willing to finance front-end uranium resource development.

The shape, form, and scope of the uranium industry in the immediate future is the easiest to forecast. Everyone analyzing the industry agrees, give or take a powerplant completion or two, or a slippage here and there, what the installed and operating nuclear capacity will be over the next 20 years and the resulting uranium requirements. The

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result is a gradually expanding market to fuel the completed plants. Competition will be keen and project and company mortality is not over. Cost competitiveness and flexibility in meeting utility requirements are the key ingredients to success in the uranium industry to come.

Senator SIMPSON. Mr. Groth, let me ask you if I may, could you go on to your statement as to how to get there? I think that's important, and as I say, we're approaching the time of the 10-minute limitation. If you could review that, I think that would be very helpful. I hate to have to do that.

Mr. GROTH. We'll skip the viability part, which we all agree is the word we don't like. We'll talk about how to get there.

The answer is clear, the uranium industry must be turned around from a dead-ended industry which is in the process of decay. It must be rejuvenated at the front end of the cycle, accentuating exploration and development. That's where the problem begins. There is not a meaningful domestic uranium exploration effort at this time, nor is there any indication of one beginning timely to fit the coming market cycle.

With their present knowledge, the public does not care whether we become dependent on foreign uranium. Industry and the financial communities fear foreign uranium competition and are reluctant to investigate in the face of it. The key to solving the uranium industry viability question ultimately rests in attracting capital to finance the high risk, front-end exploration and development part of the cycle. In the past when uranium prices and markets warranted, investment in uranium exploration and development was considerable. At the present time, the need is not so obvious, the profit not so assured and the financial community is disinterested. Uranium exploration will resume only when the industry and the financial community is aware of the needs, and the market offers reward commensurate with the inherent high risk.

In my opinion, one of the problems in attracting investment interest is that at the present time capital is being directed into numerous other investments, many of which provide no comparable constructive use of capital.

To finish, I'll talk a little bit about import. Many in the industry say limit or stop foreign uranium imports. I do not believe that imports are an issue as yet for the following reasons:

First. I believe a clear domestic buyer preference for the uranium of U.S. origin has been long demonstrated due in large part to delivery certainty.

Second. Foreign uranium is not cheap uranium and is not being dumped.

Third. The marketing inroads by imports begun in 1981 and 1982 due to the pricing strategy in the two-tiered market system will stabilize with the disappearance of the inventory overhang.

Fourth. In any case, under present industry conditions and in a competitive market, this country will be dependent on foreign uranium by the end of the decade.

Senator SIMPSON. Thank you very much. Thoughtful presentation. Mr. Moore, please.

STATEMENT OF C. R. MOORE, MANAGER, MARKETING, MINERALS DIVISION, GETTY OIL CO.

Mr. MOORE. Thank you, Senator. I am president of Getty Minerals Marketing. Getty's minerals activities involve the production of and marketing of uranium and other minerals on a worldwide basis. We own the Petrotomics operation in Shirley basin that produces uranium and we're also part owner of the Jabalooktu [phonetical] deposits in northern territory of Australia.

Wyoming is a State blessed in natural resources, particularly uranium, coal, and petroleum. Getty has been pleased to be a continuing corporate participant in the responsible economic development of these resources and we have a longstanding public commitment to free enterprise and free trade. Getty has been involved in uranium mining and milling in Wyoming for over 20 years, and like others represented here today, we have experienced the periodic boom and bust cycles which characterize not only this industry but all minerals industries.

We are well aware of the gravity of the uranium situation in the United States today. Our Petrotomics uranium mining and milling operation in Shirley basin are currently functioning at only about one-third capacity. However, I must caution you not to confuse this depressed condition with viability. Even though import restrictions might benefit our own domestic operations for the short term, we believe free market international trade, not trade barriers, is much more in the interests of most Americans including the citizens of Wyoming.

Let me emphasize from the onset that Getty's principal concern is that free trade in the uranium industry might be in jeopardy. We firmly believe that protectionism, whether for uranium or other goods, is bad for America and that any law which might lead to a form of national central planning is dangerous. We are concerned that Public Law 97–415, which is being implemented by the DOE and which is important trade legislation regarding the uranium industry, was enacted with no hearing in the Senate committee with trade jurisdiction and with no hearings at all in the House of Representatives.

As we know, I am convinced that the notion that the importation of uranium poses a potential threat to national security is impossible to sustain.

As we all know, Australia and Canada are the two largest potential sources of low cost foreign uranium. These countries have long been allies of the United States and can be expected to continue to be favorably disposed toward trade with the United States. It is safe to say that any change in these underlying factors would occur under circumstances which would allow the United States ample time to make adjustments.

Second, current privately held domestic uranium inventories represent more than 4 years of expected consumption. Government-owned uranium inventories which are totally ignored by proposed criteria represent a significant addition to that total, up to 4 more years. It should be noted that only 24 to 48 months are required to bring back domestic uranium mines. Getty had experienced here with Petrotomics where we shut the operation down in 1972, and in 1976 we resumed the start-up and in a little over 2½ years, we were back to full capacity.

Finally, even if we consider the remote possibility of a foreign supply shutoff from Canada and Australia, there need be no major affect on American electricity utilities usage. Nuclear power constitutes 12 percent of America's total electrical capacity. Of course, one might argue this is significant and any disruption could affect security. Studies have repeatedly shown that U.S. utilities are already sensitive to this possibility. Most utilities have imposed self-determined limits on the amount of foreign supply they will import in order to balance their supplies with economic considerations.

In short, the national security argument cannot be sustained now or for the foreseeable future.

What has caused the current depressed conditions of the domestic uranium mining and milling industry? The principal underlying reason for the current level of activity in this U.S. uranium industry is a significant decline in demand for uranium. This can be traced to several factors. First, the demand for electricity in the free world has been much lower than anticipated. Today we have 55,000 megawatts of nuclear power operating in the United States. At one time it was projected that the United States would have 150,000 megawatts of nuclear power operating in 1980. That amounts to a reduction of at least 40 million pounds of uranium per year. It was the tremendous projected growth of nuclear power that caused the expansion of the domestic uranium industry in this country.

Second, there have been numerous cancellations of these projects stemming from the lowered electricity demand growth and also from Government policy decisions that have been based on safety and environmental concerns.

Your second questions, "What steps can be taken by both industry and State and Federal Government to bring about a strong and robust recovery of the industry?" The strength and level of activity in the uranium industry is largely a function of the demand for uranium. The demand for electricity and thus for uranium can be expected to increase as an overall level of economic activity in the free world increases. Therefore, any policies of State or Federal Government which promote a strong and robust economy will benefit the uranium industry.

Second, public concerns about reactor safety and nuclear waste disposal must be successfully addressed. And we congratulate Congress on the passage of the nuclear waste bill last year.

What relationship is there between a healthy domestic uranium industry and imports of uranium from other countries, and what steps should be taken to reduce concerns related to imports of uranium?

There is no question that the use of imported uranium in this country reduces the demand for domestically produced uranium. While it may be tempting to conclude that the answer to improving conditions in the domestic uranium industry is to restrict the importation of foreign uranium, we believe this course to be both shortsighted and not in the overall best interest of the country.

The cost of producing uranium is largely a function of the quality or grade of the ore in the ore body. In the United States today, we unfortunately have lower grade ore than in other countries resulting in a disadvantage in comparative production costs. To the extent that low

cost uranium can be procured from foreign sources, it could well be in our national interest to take advantage of those sources and leave the higher cost uranium in place until it can be economically developed in the future. Supply diversification is a cornerstone and should be a major policy of U.S. purchasers as well.

Another point we need to keep in minds is one of the top priority issues for the administration and indeed this country and the entire world, is progress toward effective nuclear disarmament. Australia and Canada are two of the strongest allies in this effort. It would be foolhardy in return for these two countries' loyalty to now enter restrictions between our countries.

Free enterprise has been the basis of America's progress. The Reagan administration is publicly committed to free trade; and Getty sincerely believes our Nation and all citizens will be best served if we adhere to those principles.

We hope our comments today and the materials we shall submit to the record, including a study being prepared by a reputable independent energy economist, will provide you with worthwhile information. Thank you.

Senator SIMPSON. Thank you very much for your presentation and the understanding of our time problem. I think we have an interesting range of views there on what impact, at least, imported uranium has on the domestic uranium industry. If you can respond to this as briefly as possible, is there concensus among you about what might constitute the phrase "viable uranium industry?" I think you've phrased the definition of it well, Jim. But are we at the stage where our domestic industry is no longer viable, and if we are not, then what point would each of you be prepared to say that we would reach that stage.

Mr. WILSON. Well, we're there in my opinion.

Senator SIMPSON. You're there. OK.

Mr. WILSON. And while we are all aware, I think, of utility purchasing executives' expressed preference for spreading their bets, if you will, and their purchasing policies, and that is reassuring, and it's intelligent on their part, I think on the other hand the very process that we're engaged in now growing out of the amendment enacted last year is one that only comes after the fact. That is, the purchasing practices that are going on right now are in effect forming a trend, the net effect of which will be over before we've caught onto it. And so I think we need to look at the motives—not—I'm using the term "motive" not in a hypercritical sense, but incentives perhaps, I should say, of this international uranium market and what those incentives may produce and whether or not that might create a kind of condition of concern and vulnerability to us.

Senator SIMPSON. Mr. Ritchie, please.

Mr. RITCHIE. I think I can describe viability for Pathfinder quite simply and it would be economic. If we can explore, discover replacement resources which can be developed and return a 20 percent return on our investment, we will then consider that project in our segment of the industry to be viable.

Senator SIMPSON. Are you at this point?

Mr. RITCHIE. We have some contractual relationships which we have been working under during this decline in the industry. We

are talking with our customers about extensions to such contracts. I believe that while we're only operating at between one-third to one-half of our capacity, we can weather the current down turn and be in a position to move when the market turns around.

Mr. GROTH. We're not there but for entirely different reasons. Mines are not forever. Ore is not always ore, and to me the major concern is that the cycle is completely out of whack to the back-end and there's no provision for rejuvenation process.

Mr. MOORE. I think we'd agree with Mr. Ritchie. First of all, it's very difficult to judge an entire industry and say it's viable. We have projects which are viable; we have others which are not. The future viability is going to be dependent on price for cost, and we all know the uncertainty on that. I think our major concern is if you conclude it's not viable, what do you do about it and the entire implications on international trade which you addressed previously, we share a major concern.

Senator SIMPSON. We know about this market survey pointing to a tripling of contracts for foreign uranium from 1981 to 1982. Is this just some anomaly, or does it point to a growing trend favoring imported uranium?

Mr. WILSON. Well, I don't think it's an anomaly. What you want to do, all of us need to do, is look at the facts and these are some facts and I think we all know the background against which those facts are being reported. It's worth taking a very careful look at those facts.

Senator SIMPSON. Yes, Mr. Ritchie——

Mr. RITCHIE. Well, I was going to say, Senator, that I think, yes, it has tripled from quite a low level. I think as Dr. Clark indicated earlier, the consumed uranium in the United States from foreign sources is presently only about 20 percent; and I think that's an important number and I don't know whether my compatriots would share this view, but it seems to me that there are many, many utilities in the United States who insist that the source of their natural uranium be domestic for the reasons that I touched on in my presentation.

Senator SIMPSON. Do you find in your dealings with customers in this country, that there is a recognition of the potential problems that any increased reliance on foreign uranium would create and any form of voluntary self-restraint among the customers that you see about how much foreign uranium they will purchase?

Mr. MOORE. I think some of the proposals which come from the utilities, for example, have taken bids from only domestic suppliers within the last year. Others, as Mr. Clark's surveys have shown, they have self-imposed limits in the amounts they will import. And when they purchase, they stay fairly close to these limits. Now, their major concern, and I appreciate their problem, is the cost of the uranium because if they purchase at a cost higher than the market, frequently the Public Service Commission will not allow them to pass that cost through to the electricity consumer.

Senator SIMPSON. You heard Bill Budd testify about various issues, uranium mine tailings, Radiation Control Act, radionuclides under the Clean Air Act. We discussed that. The health and safety from the implementation of those. What do you assess in your corporate

activities as to the costs of complying with proposed standards in each of those areas and what form of control technology would be required to meet clean air standards if that were to be adopted? And is that technology currently available to measure the emission levels proposed, particularly with what you know about existing background levels in milling and mining. Can you pick through that one?

Mr. WILSON. All of these things have very definite cost implications, and it's so easy to fall into the trap of complaining about regulations because of their cost impact. The fact is they have a cost impact and that has some bearing on viability because standards throughout the world are not identical. The concern is the notion of overkill which I referred to later. I think we would all push hard for those health and safety standards that truly assure that or achieve that as a primary objective. But those that go beyond it at very great costs to the American consumer basically are undesirable and self-defeating.

Senator SIMPSON. Mr. Ritchie.

Mr. GROTH. I think just to add flavor to that, we're living in the modern era and those things are to be expected. They're part of the cost of doing business, and I think it's the responsibility of the industry to work toward the most economic accommodiation of the problems and live with it.

Mr. RITCHIE. I think our problem oftentimes with regulations is that they are so ill-founded. As you're aware, Senator, you know the EPA has not demonstrated that radionuclides are in fact hazardous pollutants, but section 112 of the Clean Air Act indicated—the model that EPA used to arrive at their two picocurie threshold; namely, a person would have to live 71 years 500 meters away from the discharge of an underground mine and spend 75 percent of his time inside, is so unrealistic that it's laughable. We believe that the current level of NRC of three picocuries is a more realistic level.

Senator SIMPSON. Well, for those of you that are involved in uranium mining and exploration activities in other countries, how do your planned corporate expenditures for exploration in these other countries compare with your exploration expenditures here in the United States?

Mr. RITCHIE. I can answer that quickly. Eighty percent of our exploration budget is expended domestically with the balance overseas.

Senator SIMPSON. Eight?

Mr. RITCHIE. Eighty. Eight zero.

Senator SIMPSON. Eighty. All right. Any other response there?

Mr. MOORE. I think recognizing that uranium production costs are going to be highly a function of grade, a higher percentage of our dollars today for uranium exploration are spent in Canada and Australia just because our geologists believe there's a better chance of finding high-grade deposits there than there are here in the United States.

Senator SIMPSON. Let me ask finally what steps should the Federal Government take, in your opinion, to address the import issue either now or if you view it as a matter of present concern, and some do, or in the future. I heard what you were saying, but I just am talking about the Federal Government now, no one else, and your opinion on the import issue which is one of those marvelous ones filled with emotion.

And when you get one of those going, it will overwhelm reason. And so where are we with that issue of import restrictions by the Federal Government, whether you think it's there or not an issue or is an issue, whatever.

Mr. WILSON. Well, you have set in motion a process that we're all engaging in right now. And the thing of utmost importance to me is that that process be carried out in a—not in a head and shoulders way, but in a very serious broad scoped way. The market system is the backbone of this society, and we're not trying to diminish or undermine that, but it's an imperfect world. There are countries we're looking at themselves pursue energy policies that are restrictive inherently, so it is an imperfect world. So the Federal Government has a role to play in the context of this imperfect world which I think can alert us to long-term, high risk in overdependence.

Senator SIMPSON. Mr. Ritchie.

Mr. RITCHIE. I think that we in Pathfinder are quite neutral. We've been involved in international uranium marketing business for 18 or 19 years. I really don't think that too much is going to come out of the viability study work.

Mr. GROTH. When it was first announced. I assumed it was another one of the camels built by committee in Washington since it really didn't say anything. But the more one thinks about it, I see a value in it, in that it triggers a thought, ongoing thoughtful process of about just exactly what is happening. And I think that rather than coming to a definite conclusion about imports, that the results will tend to substantiate the testimony which I have presented here today.

Mr. MOORE. I think I agree with my colleagues that the process is good and we certainly, any time we can get a lot of citizens to come here and hear the issues and address them, it's obviously something we should address. Our concern would continue to be hopefully letting the market take care of itself. It did very wonderfully in the early 1970's, the market worked very well to cause expansion and we're optimistic that this will occur again in the future.

Senator SIMPSON. I am deeply appreciative of your participation. You've been very helpful and it's good to have a diversity of viewpoints by people who are deeply invested in the State of Wyoming. Each of you, in some very significant way, are certainly a part of that. And the people of this State, I don't think demand things of their corporate citizens that are unwarranted or untoward or unapproachable, but aside from the basic elements of fairness, they'd just like to know what's up. And that's what I've found, you level with them and they'll listen; and if it's painful poison medicine, they'll still take it as long as they know what it is and the realities and facts behind it. And you have shared, in a great deal of candor, some of the issues. I think there was a statement submitted for the record by Mr. Tom Melrose, vice president of Teton Solution Mining. Is he here? Mr. Melrose?

Mr. MELROSE. Former vice president. No longer.

Senator SIMPSON. I see.

Mr. MELROSE. I guess I agree pretty much with what everybody says, so I wouldn't care to make any additional statement. I am quite concerned about the use of the term "viability." Are we going to get the same terminology for other industries, copper, iron, or same measures. I think it's a mistake to use viability in that sense.

Senator SIMPSON. All right. And you do have a statement though that you will enter in the record; is that correct?

Mr. MELROSE. Yes. You have the record.

Senator SIMPSON. We have that. And I thank you for your additional oral comments. Anyone wishing to submit commentary for the record has a 3-week period in which to do that, and we will appreciate having it. I particularly appreciate the effort of all of these witnesses and the very cogent testimony that really has been helpful and I regret I must be off to a town meeting in Shoshoni. I don't regret that, but I regret they've got me scheduled. And so, thank you. You've been very generous with your time. And I thank the reporter, Tina Brilz, for her efforts without pause, and having dabbled in the practice of law a little in this State, you really whacked away at that without letup. Thank you. And thanks to all of you for coming and participating as part of the audience in this hearing. That concludes the hearing. Thank you very much.

[Whereupon at 11:40 a.m. the hearing was adjourned to reconvene at the call of the Chair.]

[Statements submitted for the record follow:]

28-484 O - 84 - 6

U.S. SENATE COMMITTEE ON ENVIRONMENT AND PUBLIC WORKS
SUBCOMMITTEE ON NUCLEAR REGULATION

DOMESTIC URANIUM MINING AND MILLING INDUSTRY
ITS CURRENT STATUS AND FUTURE

REMARKS BY

THE HONORABLE ED HERSCHLER
GOVERNOR OF WYOMING

LITTLE THEATRE
CENTRAL WYOMING COLLEGE
RIVERTON, WYOMING
9:00 A.M.
AUGUST 29, 1983

HUNDREDS OF DRILLS OPERATING DURING THE PEAK ASSESSMENT PERIODS. A RECENT MINING JOURNAL REPORTED THAT ONLY FIFTEEN EXPLORATION DRILLS WERE RUNNING LAST YEAR.

IN TERMS OF EMPLOYMENT, 4,000 JOBS HAVE BEEN LOST OVER THE LAST FEW YEARS. FROM A RURAL STATE'S PERSPECTIVE THIS SITUATION IS CRITICAL. AS A COMPARISON, 75 PERCENT OF ALL OUR CITIES AND TOWNS HAVE POPULATIONS UNDER 4,000 PEOPLE.

WHEN WYOMING'S URANIUM INDUSTRY FIRST FELT THE CUTBACKS, THE MINING ASSOCIATION REFERRED TO THE CONDITION AS "A GENERAL BELT TIGHTENING." NOW I SUSPECT THE INDUSTRY HAS LONG FORGOTTEN ABOUT ITS BELT AND IS SERIOUSLY WORRIED ABOUT ITS PANTS.

UNFORTUNATELY, I DO NOT BELIEVE THAT ANY ONE PERSON OR GROUP CAN QUICKLY BRING ABOUT A STRONG AND ROBUST RECOVERY OF THIS INDUSTRY. IN GENERAL, NEARLY EVERYONE WOULD AGREE THAT THE URANIUM PRODUCTION DECLINES ARE THE DIRECT RESULT OF REACTOR DEFERRALS AND CANCELLATIONS, WHICH HAVE DRASTICALLY REDUCED DEMAND PROJECTIONS. THE REACTOR CANCELLATIONS ARE DUE TO A NUMBER OF REASONS. THOSE PRINCIPALLY CITED INCLUDE LOWER LOAD GROWTH, REGULATORY DELAYS AND UNCERTAINTIES, AND FINANCIAL CONSTRAINTS.

NO ONE COULD QUICKLY INFLUENCE ALL THESE FACTORS, THEREBY INCREASING THE DEMAND FOR URANIUM. BUT THIS DOES NOT MEAN THAT WE ARE JUSTIFIED IN DOING NOTHING. CERTAINLY

WE CAN AND SHOULD ADDRESS ISSUES MORE DIRECTLY UNDER OUR CONTROL WHICH COULD HELP EASE THE PROBLEMS FACING THIS INDUSTRY.

AS AN EXAMPLE, WYOMING'S LAWS AND POLICIES ON URANIUM MINING DO NOT DIRECTLY AFFECT THE FUNDAMENTAL DEMAND FOR URANIUM. HOWEVER, WE HAVE NOT HIDDEN BEHIND THIS AS AN EXCUSE FOR DOING NOTHING. AS A DIRECT RESULT OF THE URANIUM CUTBACKS, WE DEVELOPED A BETTER STATE POLICY ALLOWING FOR A DEFERRAL IN RECLAMATION REQUIREMENTS. THIS POLICY ALLOWS A MINE TO LEAVE PITS OPEN SO REMAINING RESERVES CAN BE DEVELOPED WHEN THE MARKET RECOVERS. WE ARE ALSO NOW REVIEWING OUR BONDING REQUIREMENTS TO ENSURE THAT COMPANIES

ARE NOT BEARING UNDUE BONDING EXPENSES. FINALLY, WE ARE WORKING TOWARD BETTER COORDINATION BETWEEN STATE AND FEDERAL AGENCIES, TO HELP AVOID REGULATORY DELAYS AND UNCERTAINTIES IN PERMITTING MINES. AGAIN, NONE OF THESE EFFORTS, INDIVIDUALLY OR COLLECTIVELY, DIRECTLY AFFECT THE DEMAND FOR URANIUM. BUT THEY ARE WITHIN OUR AUTHORITY AND THEY ARE LEGITIMATE MEANS TO HELP A TROUBLED INDUSTRY.

I WOULD URGE CONGRESS TO APPROACH THE URANIUM ISSUE USING THIS TYPE OF ANALYSIS. AS A CONGRESSMAN AND A LEGAL SCHOLAR, YOU KNOW THAT GOVERNMENT NEED NOT MATCH THE MEANS WITH THE END BY MATHEMATICAL PRECISION. IN FACT, SOME FEDERAL ACTIONS APPEAR ABOUT AS PRECISE AS DOING SURGERY

WITH A MEAT AX. TO REQUIRE PRECISION BEFORE ACTION IN THIS COMPLEX AND CONTROVERSIAL AREA WILL LEAD TO TOTAL PARALYSIS. SUCH A RESULT WOULD BE PARTICULARLY DISCOURAGING WHEN USEFUL ACTION THROUGH IMPORT RESTRICTIONS IS POSSIBLE.

I MUST CONTINUE TO STRESS THE NEED FOR IMPORT RESTRICTIONS. THE POTENTIAL FOR COMPETITION BY FOREIGN PRODUCERS WITH RICHER GRADE ORE AND LOWER PRODUCTION COSTS, PERPETUATES AN UNSTABLE MARKET CONDITION FOR URANIUM DEMAND AND PRICES.

FOREIGN URANIUM PRODUCTION INDEED CREATES A PROBLEM. EARLIER, I STATED THAT WYOMING URANIUM PRODUCTION IS AT A 17 YEAR LOW - THAT IS SINCE 1966. THE MOST RECENT

EDITION OF THE AMERICAN MINING CONGRESS JOURNAL REPORTS THAT CANADA'S URANIUM OUTPUT IN 1982 WAS THE HIGHEST IN 20 YEARS. THE JOURNAL CONTINUES THAT THIS URANIUM IS SHIPPED LARGELY TO THE INDUSTRY'S EXPORT CUSTOMERS. FROM THIS REPORT, NO ONE SHOULD SUGGEST THAT FOREIGN URANIUM EXPORTS DON'T COMPETE WITH OUR DOMESTIC RESERVES.

THE DOMESTIC URANIUM PRODUCERS AND THE STATES NEED AS MUCH CERTAINTY AS POSSIBLE WHEN TRYING TO FORECAST RECOVERY. WE ARE BOTH INTERESTED IN EMPLOYMENT AND AN IMPROVED ECONOMY. WE ARE ALSO BOTH INTERESTED IN A SOUND, LONG-TERM POLICY SUPPORTING DOMESTIC URANIUM PRODUCTION. MORE THAN HALF OF WYOMING'S EXTENSIVE URANIUM RESERVES STILL

REMAIN IN THE GROUND. FINALLY, WE ARE BOTH INTERESTED IN LARGE AREAS OF DISTURBED LANDS WHICH SHOULD BE EITHER MINED OR RECLAIMED. THE FOREIGN IMPORT QUESTION DOESN'T NEED TO ADD ANOTHER UNKNOWN VARIABLE TO THE ALREADY COMPLEX EQUATION ON URANIUM DEMAND AND PRODUCTION.

IN CLOSING, I WOULD AGAIN URGE ACTION TOWARD A LIMITATION ON U.S. URANIUM IMPORTS. YOU SHOULD AVOID THE PARALYZING ARGUMENT THAT IMPORTS DON'T DIRECTLY INFLUENCE DEMAND FOR DOMESTIC URANIUM. RATHER, YOU SHOULD ASK, WHAT USEFUL ACTION CAN BE TAKEN TO ENCOURAGE STABILITY AND PROMOTE A RECOVERY OF THE URANIUM INDUSTRY. I FIRMLY BELIEVE THAT AN IMPORT LIMITATION WOULD SERVE THIS END.

THANK YOU FOR THIS OPPORTUNITY TO PRESENT MY VIEWS ON THIS IMPORTANT SUBJECT.

	1977	ACTUAL PEAK	1978 PROJECTIONS FOR 1983	CURRENT LOW
ORE PRODUCTION (MILLION TONS)	4.5	5.5	13.7	2.1
U_3O_8 PRODUCTION	4990	6036	12,500	2521
EMPLOYMENT	4063	5301	7394	1274

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SYNOPSIS OF THE WYOMING

URANIUM INDUSTRY

Prepared by:

Pam Erthal
Stig Hallingbye

Department of Administration and Fiscal Control
Research and Statistics Division
Cheyenne, Wyoming 82002

August, 1983

INTRODUCTION

The major counties/areas in uranium mining and milling in the State of Wyoming are in order of number of tons produced: Fremont County (Crooks Gap-Green Mountain, Gas Hills), Sweetwater County (Red Desert), Converse County (Powder River Basin), and Carbon County (Shirley Basin).

Forecasts for increased demand for uranium and good price prospects brought several companies into production in the mid to late seventies, doubling production of ore from 1974 to 1978 (see graph). The future looked bright for the industry.

The late seventies and early eighties brought forth several incidents that slowed the industry down including Three Mile Island and subsequent negative attitudes by the public and the press, and several reactor cancellations nationwide. Wyoming uranium producers were faced with severe overproduction. Prices for Yellowcake (U308) were forced down. On line reactors, reacting to low prices were buying large amounts and stock piling. In addition uranium from Canada, which in general offers higher grade and is cheaper to produce was competing on the spot market and prices continued to decline. Foreign suppliers, including Canada, became a major factor in a tight market. In order to stabilize prices producers had to buy up uranium.

Currently Wyoming producers still operating are mining mainly to honor long term contracts already established. Foreign markets, although faced with higher premiums for uranium, finds the political climate of the U.S. desirable when seeking stable supply sources. The situation, marked by a 5 year or more inventory glut, calls for Wyoming producers to produce at low levels or just operating with maintenance crews.

Production

The uranium industry in Wyoming has over the last 2 to 3 years had a severe drop in production. From 1980 to 1982 net taxable production was down from 5.4 million tons of ore to 2.1 million tons, or a 61% drop. There is cautious optimism in the industry as to the future of mining and milling of uranium and current levels are forecast to be holding or increasing slowly. Maximum production levels were achieved in 1978 at 5.5 million tons (net taxable). Return to high levels of production is only seen if prices increase significantly. Large stock piles seem to prevent this from happening in the short term.

Employment

The uranium industry has over the last two to three years become severly depressed. At the height of the uranium boom, early 1980, the industry employed 5449 people with the work force forecasted to reach 8500 workers by 1990. At the beginning of 1983, 1534 people worked in this industry, a reduction of 72 percent in less then three years. All of the four counties engaged in uranium production have experienced double-digit unemployment rates this year. The number of producers in the industry has dropped from 21 to 19, six of them with less than a dozen employees.

The county hardesthit by the uranium slowdown has been Fremont where half of the jobs lost were located. Jeffrey City was particularly hard hit. It had an estimated population in 1980 of over 3,000 people and is now down to 350-400 people. Jeffrey City is basically a company town established by Western Nuclear Uranium Company.

Most of the companies in uranium mining have retained maintenance crews so a start up in production could come within 4-6 months. However, short term forecasts seem to point to more layoffs, bringing the total work force to under 1500 with the rumored closing of the Union Carbide mine in the Gas

Hills next March.

Taxes

The uranium crash has had a financial impact on the State and county coffers. Sales tax collections have dropped significantly in all four counties (a decrease between 13 and 23% for FY82 and FY83). This has resulted in a smaller State General Fund account and a financial squeeze on county and local governments. All of the decrease is not due to the uranium industry as the uranium crash coincided with a recession in other mineral industries in these energy-impacted counties. The decline in sales tax collections is expected to continue throughout FY1984 at least.

Uranium severance tax collections have dropped steadily from the high in FY1979 although stabilized production and higher current prices showed a stabilized tax revenue for the next few years. Forecasts for FY84 done by this office hold uranium severance taxes fixed at 1983 levels if current prices remain stable.

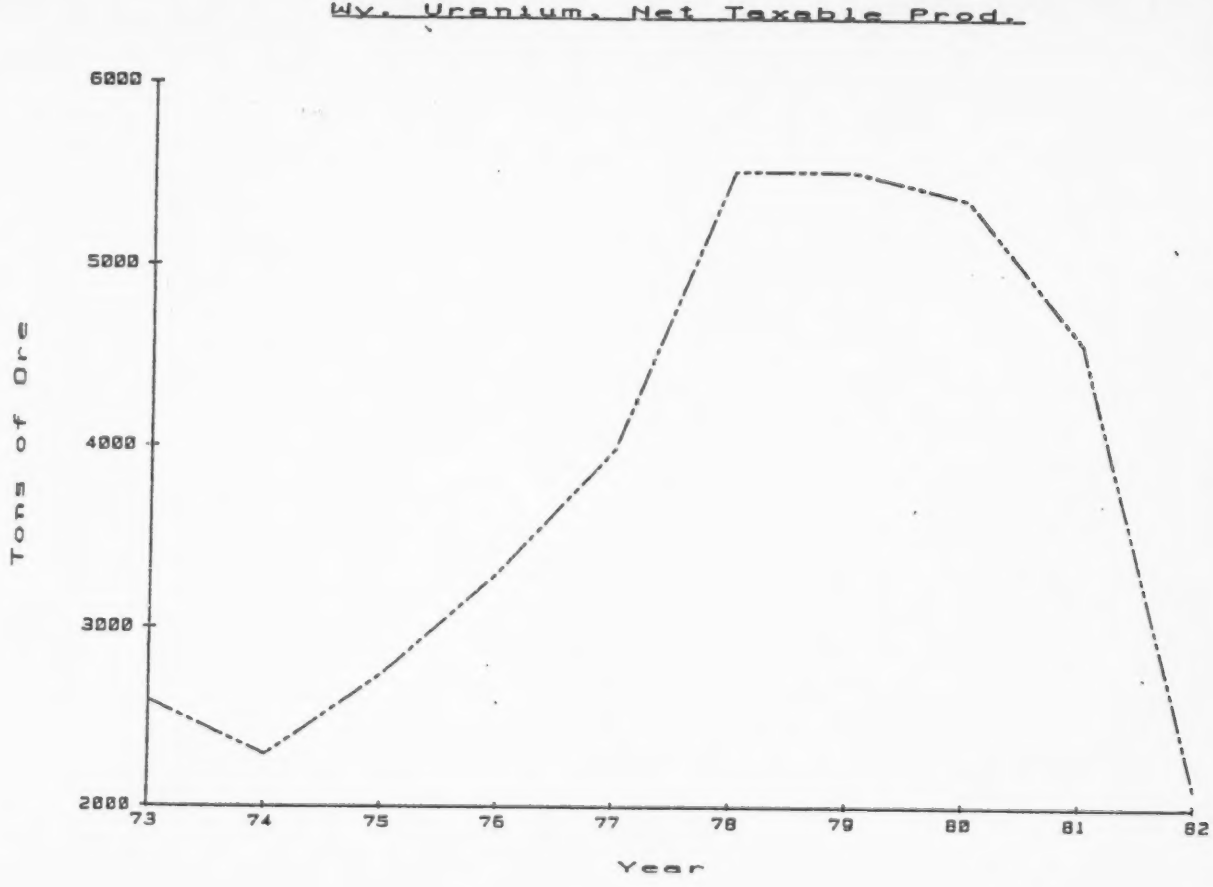
The high unemployment in the uranium industry has contributed to the problems with the Unemployment Trust Fund. Unemployed uranium workers with their relatively high wages (average hourly wage of $13) usually draw maximum unemployment benefits.

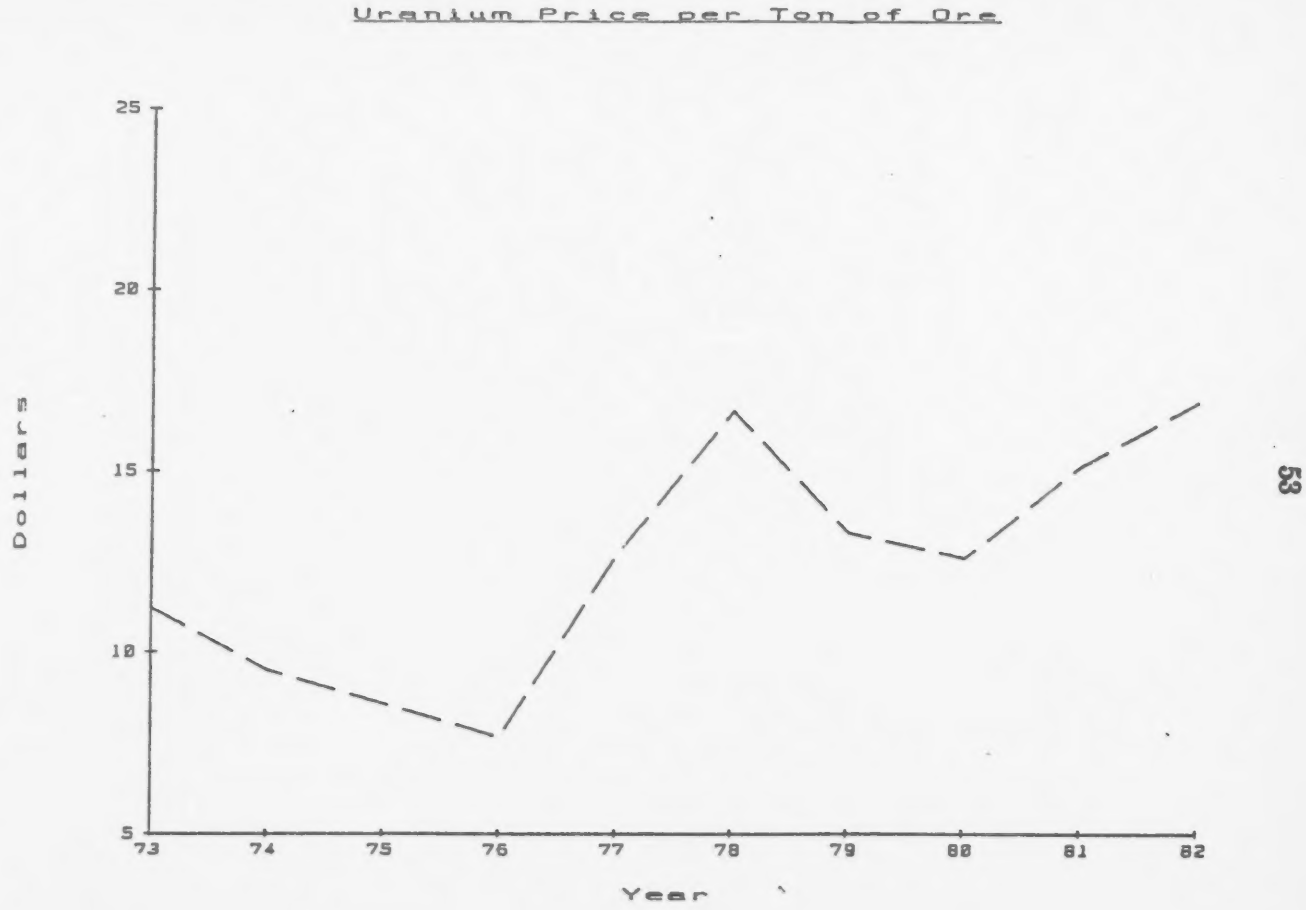
LONG-TERM OUTLOOK

The growth in nuclear powered electric generating plants (the major user of uranium) faces an uncertain long-term future. The economics of production at this time show that electricity from a nuclear power plant ordered today would be at least twice as expensive as from coal. The supplies of coal seem to be adequate for at least the next 15 to 20 years. The

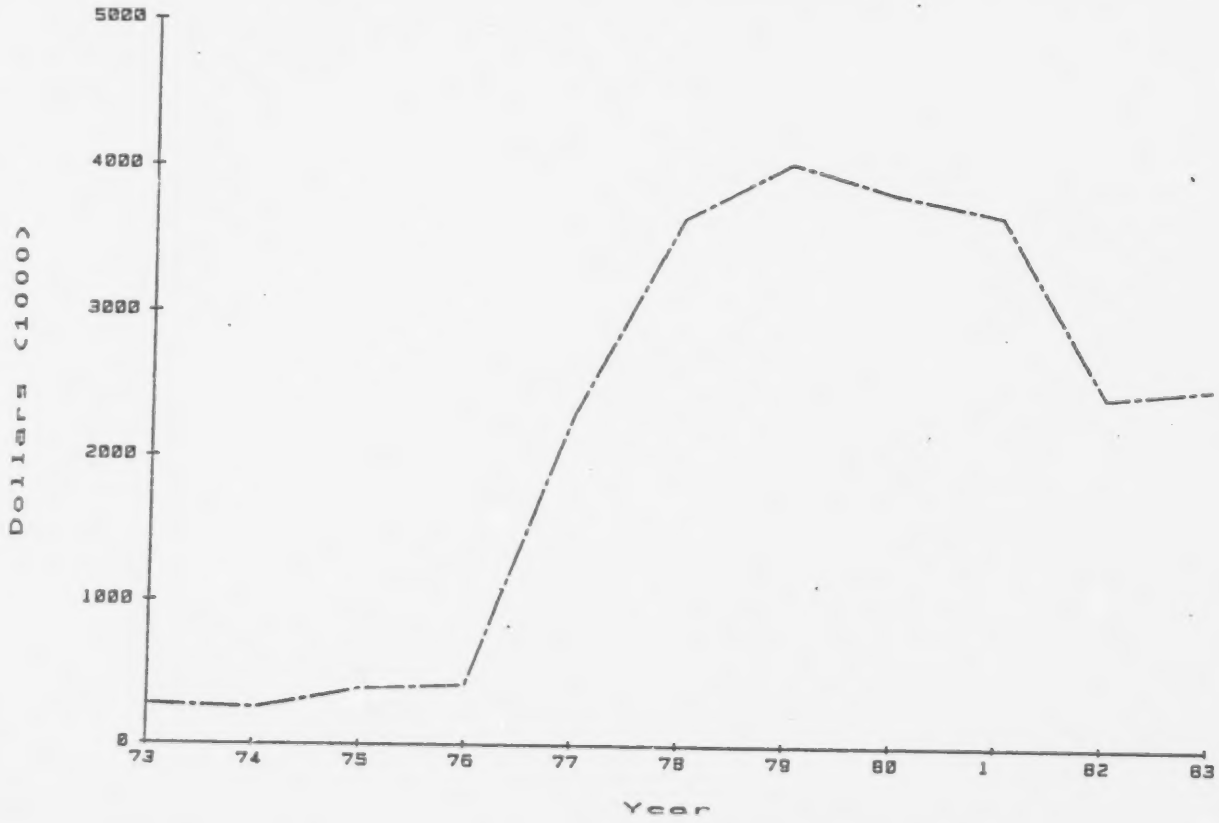
recent financial disaster of the Washington Public Power Supply System that resulted in a bond default and terminated construction certainly casts a tenuous near-term future for the financing of nuclear power plants. The economic facts coupled with a poor public perception of safety for the industry will stifle the nuclear power industry in the United States for years to come.

With Wyoming the second largest producer of uranium in the country the poor outlook for growth in production of power will be a factor in growth in the mining industry in the State. However with other uses of uranium, new plants starting up that were built in the '70s, and foreign demand production should remain stable and grow slowly in the future. Any real upswing in this industry is not foreseen until the early 1990's, when stock piles are reduced. The industry can be characterized as one with cautious optimism for the future.


Wy. Uranium, Net Taxable Prod.
6000
5000
4000
3000
2000
Tons of Ore
73
74
75
76
77
78
79
80
81
82
Year


Uranium Price per Ton of Ore
25
20
15
10
5
Dollars
73
74
75
76
77
78
79
80
81
82
Year

Uranium, Severance Taxes



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Department of Environmental Quality officials:
Ed Francis, Cheyenne
Lynn Askew, Lander
Robert Sundin, Cheyenne

STATEMENT
PRESENTED BY

WILLIAM H. BUDD, JR.
EXECUTIVE VICE PRESIDENT
WYOMING MINING ASSOCIATION

TO

SENATOR ALAN K. SIMPSON'S
SUBCOMMITTEE ON NUCLEAR REGULATION

AUGUST 29, 1983
RIVERTON, WYOMING

MR. CHAIRMAN, MY NAME IS BILL BUDD AND I AM THE EXECUTIVE VICE PRESIDENT OF THE WYOMING MINING ASSOCIATION. THE WMA IS A TRADE ASSOCIATION REPRESENTING 70 MINING COMPANIES, 200 ASSOCIATE COMPANIES AND 721 INDIVIDUAL MEMBERS.

I AM PLEASED TO HAVE BEEN ASKED TO TESTIFY HERE TODAY ON BEHALF OF THE BELEAGUERED URANIUM INDUSTRY. THIS INDUSTRY HAS BEEN AN IMPORTANT PART OF THE ECONOMY OF THE STATE OF WYOMING AND MORE IMPORTANTLY, FREMONT COUNTY, SINCE THE EARLY 1950'S.

WE SINCERELY HOPE THAT YOU AND YOUR ASSOCIATES IN THE UNITED STATES SENATE WILL TAKE THE INFORMATION THAT IS BEING PRESENTED HERE TODAY TO WASHINGTON AND MAKE EVERY EFFORT TO REMOVE THE CONSTRAINTS FROM THIS VERY IMPORTANT SEGMENT OF OUR SOCIETY.

FOR THE BALANCE OF MY STATEMENT, I WILL ATTEMPT TO RESPOND TO THE THREE QUESTIONS WHICH WERE POSED TO ME IN SENATOR SIMPSON'S ORIGINAL CORRESPONDENCE CONCERNING THIS HEARING.

WYOMING MINING ASSOCIATION

PHONE 635-0331
AREA CODE 307
HITCHING POST INN
P. O. Box 866
Cheyenne, Wyoming
82001

1. WHAT, IN YOUR VIEW, HAS CAUSED THE CURRENT DEPRESSED CONDITION OF THE DOMESTIC URANIUM MINING AND MILLING INDUSTRY?

FEDERAL POLICIES AND REGULATIONS HAVE NEGATIVELY IMPACTED THE URANIUM INDUSTRY OF THE UNITED STATES. BECAUSE OF THE FEDERAL GOVERNMENTS' LACK OF INITIATIVE AND FAILURE TO SUPPORT THE DEVELOPMENT OF NUCLEAR POWER IN THIS COUNTRY, A NUMBER OF THINGS HAVE HAPPENED WHICH HAVE HAD AN ADVERSE EFFECT ON THE DOMESTIC PRODUCER. WHEN THE ARAB OIL EMBARGO WAS ENACTED THERE WAS A LOT OF SCURRYING AROUND TO DEVELOP ALTERNATE SOURCES OF ENERGY. AT ABOUT THIS SAME TIME THE ATOMIC ENERGY COMMISSION ADOPTED THE LONG-TERM FIXED COMMITMENT - TYPE - ENRICHMENT CONTRACTS. THIS REQUIRED UTILITIES TO PURCHASE AND FABRICATE THEIR FIRST REACTOR CORE SEVEN YEARS PRIOR TO COMMERCIAL OPERATION. THIS RIGID POLICY FORCED UTILITIES INTO THE MARKET FOR FUEL PREMATURELY. MANY UTILITIES SIGNED CONTRACTS FOR LARGE QUANTITIES OF URANIUM CONCENTRATE AT PRICES THAT WERE ATTRACTIVE TO THE INDUSTRY. THE DOMESTIC URANIUM INDUSTRY ESCALATED THEIR PRODUCTION TO SATISFY THESE DEMANDS. THE UTILITIES BEGAN TO EXPERIENCE LONGER THAN PLANNED FOR DELAYS, AS A RESULT OF REGULATORY REQUIREMENTS OF AN UNFRIENDLY GOVERNMENT. ULTIMATELY, THE CONSTRUCTION OF MANY OF THESE NUCLEAR POWER PLANTS WAS STOPPED ENTIRELY BY THE GOVERNMENT'S REFUSAL TO

ISSUE CONSTRUCTION PERMITS OR LOSS OF ANTICIPATED MARKETS. AT THIS TIME THE COST OF MONEY WAS AT THE 20% LEVEL AND MANY UTILITIES BEGAN TO DUMP THEIR STOCKPILED URANIUM ON THE MARKET AT GREATLY REDUCED PRICES IN ORDER TO REDUCE THEIR DEBT AND AVOID THE HIGH INTEREST COSTS. BY VIRTUE OF EMPLOYING THE FORCE MAJEURE PROVISIONS IN THE CONTRACT, THE UTILITIES WERE ABLE TO AVOID THE TERMS OF THE AGREEMENTS UPON WHICH MANY MINES AND MILLS HAD BASED THEIR DECISION TO BUILD OR TO EXPAND. CERTAINLY, THE ABILITY OF THE AMERICAN PEOPLE TO CONSERVE ENERGY WAS BEYOND THE EXPECTATIONS OF MOST PROGNOSTICATORS AT THAT TIME AND THIS HAD SOME EFFECT ON THE REDUCED DEMAND FOR ENERGY. THE RESULT WAS INEVITABLE, THE FREE MARKET PRICE DROPPED BELOW THE LEVEL NEEDED TO PRODUCE THE PRODUCT AT A PROFIT, SO THE PRODUCERS BEGAN SLOWING DOWN OPERATIONS. THIS IS EASY TO ILLUSTRATE BY SIMPLY LOOKING AT THE TABLE OF EMPLOYMENT LEVELS OF WYOMING URANIUM PRODUCERS WHICH IS ATTACHED. IN MARCH OF 1980, 5449 PEOPLE WERE EMPLOYED BY THE URANIUM INDUSTRY IN WYOMING, IN JULY OF 1983 WE SEE THAT ONLY 1274 PEOPLE ARE EMPLOYED. THIS IS ONLY 23.38% OF THE 1980 FIGURE.

2. WHAT STEPS CAN BE TAKEN BY (I) THE INDUSTRY, AND (II) STATE AND FEDERAL GOVERNMENTS TO BRING ABOUT A STRONG AND ROBUST RECOVERY FOR THIS INDUSTRY?

(1) THERE IS VERY LITTLE THAT INDUSTRY CAN DO TO BRING ABOUT A STRONG RECOVERY. THE INDUSTRY CAN ONLY RESPOND TO THE MARKET. PERHAPS THE INDUSTRY COULD MAKE A GREATER EFFORT TO EDUCATE THE

PUBLIC ABOUT NUCLEAR POWER. FOR EXAMPLE, THE MISINFORMATION SUPPLIED BY THE PRESS AND OTHERS ABOUT THE THREE MILE ISLAND INCIDENT WAS DESIGNED TO MAKE PEOPLE BELIEVE THAT A TRAGEDY OF MAJOR PROPORTIONS WAS NARROWLY AVERTED WHEN IN REALITY WHAT HAPPENED SHOULD HAVE BEEN A TESTIMONIAL ON THE SAFETY OF NUCLEAR POWER. THE PUBLIC'S IGNORANCE AND FEAR ABOUT NUCLEAR POWER ALLOWS THOSE WHO OPPOSE THE DEVELOPMENT OF NUCLEAR POWER TO PLAY UPON THOSE FEARS WITH MISINFORMATION, INNUENDOS, AND OUTRIGHT LIES. I BELIEVE THAT THE INDUSTRY IS WILLING TO DO WHAT THEY CAN TO ADDRESS THIS PROBLEM, BUT THEY ARE LIMITED BECAUSE THEIR CREDIBILITY IS SUSPECT.

(11) MUCH CAN AND SHOULD BE DONE BY STATE AND FEDERAL GOVERNMENTS TO BRING ABOUT A STRONG RECOVERY. I CANNOT OVER EMPHASIZE THE NEED FOR A FREE AND HEALTHY MARKET WHERE THE FORCES OF SUPPLY AND DEMAND CAN FUNCTION AS THEY MUST DO IN OUR ECONOMY. THE FACT THAT THE OTHER LEADING INDUSTRIAL NATIONS OF THE WORLD ARE DEVELOPING NUCLEAR POWER AT AN ACCELERATED PACE SHOULD BE A SIGN TO OUR GOVERNMENT THAT WE NEED TO REASSESS OUR GOVERNMENT'S ATTITUDE IN THIS AREA OF ENERGY DEVELOPMENT.

THE STATE SHOULD REDUCE DUPLICATION IN THE REGULATORY ARENA WHEREVER POSSIBLE. A COST/BENEFIT ANALYSIS OF ALL REGULATIONS SHOULD BE A REQUIREMENT AT BOTH THE STATE AND FEDERAL LEVEL. IF A REGULATION CAN NOT BE SHOWN TO HAVE A BENEFIT TO SOCIETY THAT IS GREATER THAN THE COST TO THE INDUSTRY, THEN IT SHOULD NOT BE ADOPTED.

REPROCESSING PLANTS SHOULD BE LICENSED. A GREAT DEAL OF FUEL CAN BE

RECOVERED FROM THE SPENT FUEL RODS. THE PLUTONIUM, WHICH IS RECOVERED DURING THIS PROCESS IS NEEDED AS A FUEL FOR THE BREEDER REACTOR.

A WORKABLE WASTE DISPOSAL SYSTEM MUST BE ADOPTED AT BOTH STATE AND FEDERAL LEVELS. THIS SHOULD BE EXPLAINED TO THE PUBLIC BY THE GOVERNMENT TO ALLAY ANY FEARS THEY HAVE. THE TECHNOLOGY IS AVAILABLE RIGHT NOW. IT IS BEING DONE IN OTHER COUNTRIES. THE WASTE CAN BE VITRIFIED AND BURIED WHERE IT WILL BE CONFINED FOREVER. THIS IS BEING DONE IN FRANCE, FOR EXAMPLE, WHERE SPACE FOR PEOPLE TO LIVE IS A PROBLEM.

THE PROPOSED OPEN ENDED NRC FEE SCHEDULE REMOVES ANY INCENTIVE FOR THE NRC TO PROCESS LICENSE APPLICATIONS IN A PRUDENT MANNER. THIS WILL INCREASE LICENSING COSTS TO THE PRODUCER AT A TIME WHEN THE INDUSTRY CAN LEAST AFFORD IT.

BOTH STATE AND FEDERAL GOVERNMENTS SHOULD DECREASE THE TIME REQUIRED TO LICENSE MINES AND MILLS AND POWER PLANTS. WHEN THESE TIMES, PLUS DELAYS, LAST SEVEN OR EIGHT YEARS OR LONGER, THE COST OVER RUNS CAN BE ASTRONOMICAL.

GOVERNMENT SHOULD LIMIT THEIR ROLE TO REGULATING REAL AREAS OF PUBLIC SAFETY, REGULATING THE URANIUM INDUSTRY NO MORE SO THAN OTHER COMPARABLE INDUSTRIES. WHEN PUBLIC INPUT IS NECESSARY AT PUBLIC HEARINGS IT SHOULD BE LIMITED TO PEOPLE WITH DEMONSTRATED EXPERTISE, AND

TESTIMONY SHOULD BE CONFINED TO THE REAL ISSUES AT STAKE. THE EXPERTS THAT I KNOW WHO HAVE SPENT MANY, MANY, YEARS STUDYING NUCLEAR PHYSICS, ALL WHOLEHEARTEDLY SUPPORT THE DEVELOPMENT OF NUCLEAR POWER. MEN SUCH AS DR. EDWARD TELLER, DR. PETER BECKMAN, AND DR. ROBERT SELDEN, ALL SUPPORT THE DEVELOPMENT OF NUCLEAR POWER AND THEIR TESTIMONY SHOULD CARRY MORE WEIGHT THAN THE TESTIMONY OF FIFTY OR A HUNDRED MEMBERS OF SOME ORGANIZATION WHICH CARRY PLACARDS WITH CUTE PHRASES, BUT WHO HAVE NO DEMONSTRATED EXPERTISE IN OR UNDERSTANDING OF THE SUBJECT.

FINALLY, THE INDUSTRY IS GREATLY CONCERNED OVER THE PROBLEM OF THE STATE'S DEMANDS FOR FINAL RECLAMATION OF MINES WHERE ORE STILL EXISTS. NO ONE IN WYOMING HAS BEEN REQUIRED TO STOP PUMPING OR TO BEGIN FINAL RECLAMATION YET, BUT MANY ARE CONCERNED THAT THE PERMIT FOR INTERIM STABILIZATION OF THEIR MINE IS FOR ONE YEAR ONLY AND MUST BE REVIEWED EACH YEAR. IF THIS RESOURCE (THE UNMINED ORE) IS TO BE CONSERVED AND HARVESTED IT IS ABSOLUTELY NECESSARY THAT THE MINE BE KEPT OPEN UNTIL IT CAN BE PRODUCED. THE COST TO GO BACK IN, IF THE MINE IS ALLOWED TO FLOOD, OR IS FILLED BACK UP, WILL PROBABLY PRECLUDE EVER HARVESTING THE RESOURCE. THE INDUSTRY RECOGNIZES THAT DURING ANY PERIOD OF TIME THAT THE MINE IS BEING MAINTAINED ON A STAND BY STATUS IT WILL HAVE TO BE MONITORED AND THAT SOUND ENVIRONMENTAL PROTECTION AND SAFETY PRECAUTIONS WILL BE THE RESPONSIBILITY OF THE COMPANY. ALSO , INDIVIDUAL RECLAMATION PERFORMANCE BONDS MUST BE KEPT IN FORCE DURING THIS INTERIM PERIOD.

3. WHAT RELATIONSHIP IS THERE BETWEEN A HEALTHY DOMESTIC URANIUM MINING AND MILLING INDUSTRY AND IMPORTS OF URANIUM FROM OTHER COUNTRIES, AND WHAT STEPS, IF ANY, SHOULD BE TAKEN TO REDRESS CONCERNS RELATED TO IMPORTS OF URANIUM?

FOREIGN IMPORTS OF URANIUM ARE A RELATIVELY NEW CONSTRAINT TO THE DOMESTIC MINING INDUSTRY. IN 1980 THE UNITED STATES UTILITIES HAD CONTRACTS TO IMPORT 28 MILLION POUNDS OF URANIUM, WHILE TODAY, THE CONTRACTS FOR IMPORTED URANIUM TOTAL 112.5 MILLION POUNDS..... A 400% INCREASE! THE REASON IS, OF COURSE, THE CURRENT MARKET PRICE FOR URANIUM WHICH HAS BEEN DEPRESSED TO AN ARTIFICIAL LOW. CANADA, AND AUSTRALIA, HAVE LARGE RESERVES OF HIGH GRADE URANIUM AND CAN AFFORD TO SELL URANIUM ON THE SPOT MARKET. THE DOMESTIC INDUSTRY IS HARD PRESSED TO KEEP A MINE OPEN DURING THIS PERIOD AND IF OUR MINES ARE SHUT DOWN PERMANENTLY AND RECLAIMED, IT IS UNLIKELY THAT THE MINES WILL EVER REOPEN WHEN THE PRICE MOVES BACK UP TO A MORE REASONABLE LEVEL. IF THAT DOES HAPPEN, THE ONLY SOURCE FOR THE UNITED STATE UTILITIES WILL BE FOREIGN IMPORTS AND WE WILL HAVE A VERY PRECARIOUS SITUATION FOR THE ELECTRIC UTILITY INDUSTRY THAT USES NUCLEAR POWER. SOME AREAS OF OUR COUNTRY ARE HEAVILY DEPENDENT ON NUCLEAR POWER AND THE UTILITIES IN THOSE AREAS COULD FIND THEMSELVES HEAVILY DEPENDENT UPON IMPORTS FOR THEIR FUEL NEEDS. WE ALL KNOW WHAT HAPPENED WHEN OPEC SHUT OFF A PORTION OF OUR OIL NEEDS. IMAGINE WHAT MIGHT HAPPEN TO THE CITIES AND TOWNS OF THE MIDWEST OR NORTHEAST IF A LARGE PORTION OF THEIR ELECTRIC POWER WAS SHUT OFF. THE RIPPLE EFFECT THROUGHOUT THE REST OF THE

COUNTRY WOULD ALSO BE GREAT AS POWER WAS PULLED INTO THE AREAS THAT DID NOT HAVE FUEL. HOPEFULLY, WE WILL NEVER BE FACED WITH SUCH A PROBLEM, BUT THE POTENTIAL EXISTS IF THERE IS NO DOMESTIC MINING INDUSTRY IN THIS COUNTRY.

ANOTHER ASPECT THAT YOU MAY WISH TO CONSIDER IS WHAT HAPPENS TO OUR ABILITY TO PUSH FOR NUCLEAR NONPROLIFERATION IF WE (THE UNITED STATES) DO NOT HAVE ANY CONVERSION OR ENRICHMENT PLANTS. THERE WILL CERTAINLY BE NO NEED TO HAVE MILLING OR CONVERSION FACILITIES IF WE IMPORT OUR URANIUM AND THAT COULD HARM OUR ENRICHMENT FACILITIES. IT IS NO SECRET THE DEPARTMENT OF ENERGY IS EXPERIENCING FINANCIAL PROBLEMS AT THE THREE ENRICHMENT PLANTS BECAUSE OF FOREIGN COMPETITION. AND, AS YOU KNOW, THE UNITED STATES GOVERNMENT CONTROLS ALL THE ENRICHMENT FACILITIES IN THE UNITED STATES. IF THE ENRICHMENT FACILITIES BECOME OBSOLETE AND ARE CLOSED DOWN, THE ABILITY OF THE U.S. TO CONTROL NUCLEAR NONPROFILERATION WOULD BE IMPAIRED. CERTAINLY, THE OTHER COUNTRIES OF THE WORLD WHO ARE COMMITTED TO NUCLEAR POWER WILL OBTAIN THE NECESSARY FUEL TO RUN THEIR PLANTS WHETHER THEY GET IT FROM THE UNITED STATES, BUILD THEIR OWN PLANTS, OR OBTAIN THE FUEL FROM SOME OTHER COUNTRY.

THE QUESTION OF WHAT STEPS TO TAKE TO REDRESS CONCERNS RELATED TO IMPORTS IS DIFFICULT. CURRENTLY, WHEN 37 1/2 OF THIS NATION'S URANIUM NEEDS WOULD BE IMPORTED A STUDY WILL BE TRIGGERED TO ADDRESS THE QUESTION OF URANIUM IMPORTS. IN 1982 ONE REACTOR COULD HAVE UP TO 60% OF ITS NEED FILLED BY IMPORTS.

ACCORDING TO THE AUGUST 2 EDITION OF NUCLEAR FUEL 43 CUSTOMERS DELIVERED FEED TO DOE ENRICHMENT PLANTS IN 1982. OF THESE, ONLY 15 USED FOREIGN FUEL FOR A PORTION OF THEIR FEED AND ONLY 3 HAD LARGE COMMITMENTS. ONE USED ALL 60% OF THEIR ALLOWABLLE INCREMENT AND TWO USED 59%. ALL 15 AVERAGED 18.1% OF THEIR DELIVERIES. IF MORE UTILITIES USE THEIR ALLOWABLE 60%, THE SITUATION WILL BECOME VERY CRITICAL. THE WYOMING MINING ASSOCIATION AND, INDEED THE COMPANIES WE REPRESENT, HAVE ALWAYS SUPPORTED THE CONCEPT OF FREE TRADE AND ARE HESITANT TO RECOMMEND IMPORT RESTRICTIONS. THE TIME IS PAST WHEN THE UNITED STATES CAN PRODUCE AND SELL ALL OF OUR PRODUCTS IN OUR COUNTRY. WE NEED FOREIGN MARKETS JUST AS OUR FOREIGN ALLIES NEED THE UNITED STATES TO MARKET THEIR PRODUCTS, BUT WE MUST BE CAREFUL THAT THE SECURITY AND ECONOMIC HEALTH OF OUR COUNTRY IS NOT DIMENISHED BY OUR CONCERN FOR OPEN TRADE.

PREPARED BY PATHFINDER MINES:

ATTACHMENT I

Employment Levels of Wyoming Uranium Producers

Project-Location	Mar 1980	Dec 1980	Dec 1981	Dec 1982	Jan 1983	Feb 1983	Mar 1983	Apr 1983	May 1983	June 1983	July 1983
American Nuclear Casper	74	64	41	30	30	30	30	30	30	14	14
Bear Creek Uranium Casper	296	258	231	213	210	207	207	208	205	204	204
Cleveland Cliffs Casper	46	52	39	13	11	11	7	7	7	8	8
Energy Fuels Nuclear Gas Hills	50	66	66	2	1	1	1	1	1	1	1
Exxon Highland Casper	646	612	310	126	114	110	104	102	100	100	97
Federal-American Partners Gas Hills	523	342	65	31	25	24	24	23	24	32	32
Getty Petrotomics Shirley Basin	547	506	181	142	140	140	138	139	139	139	136
Kerr-McGee Nuclear S. Powder River Basin	97	36	25	19	19	19	19	19	19	19	19
Minerals Exploration Rawlins	236	267	257	213	211	195	132	82	32	32	32
Nine Mile Lake Casper	53	47	20	3	3	3	3	3	3	1	1
OPI-Western, Inc. Casper	18	20	32	10	7	6	5	5	6	6	6
Pathfinder-Big Eagle Jeffrey City	326	143	41	39	12	12	12	12	12	14	14
Pathfinder-Expl. & Devel. Riverton	44	30	17	20	20	20	20	20	20	20	20
Pathfinder-Lucky Mc Gas Hills	676	333	247	220	236	238	237	235	243	243	242
Pathfinder-Shirley Basin Shirley Basin	572	490	348	244	239	238	224	213	210	211	211
Silver King Mines Casper	156	78	56	37	37	37	37	37	38	39	39
Union Carbide Gas Hills	222	196	180	130	168	171	170	168	168	161	145
United Nuclear-Teton Casper	29	36	4	0	0	0	0	0	0	0	0
Uranium Supply Service Shirley Basin	110	60	0	0	0	0	0	0	0	0	0
Western Nuclear Jeffrey City	606	410	88	45	45	45	45	43	44	44	47
Wyoming Minerals Buffalo	82	71	8	6	6	6	6	6	6	6	6
Totals	5449	4117	2256	1543	1534	1513	1421	1355	1307	1294	1274

TESTIMONY OF IAN RITCHIE

Mr. Chairman, my name is Ian Ritchie. I am the President and Chief Executive Officer of Pathfinder Mines Corporation. Pathfinder owns and operates three uranium mines and two uranium mills, all of which are located in Wyoming. Additionally, we engage in worldwide exploration and uranium marketing efforts. Pathfinder and its corporate predecessors have been engaged in the uranium business since approximately 1957. Eighty-percent of our stock is owned beneficially by a French corporation, commonly known as Cogema. The remaining 20 percent is owned by General Electric Company.

I have personally been involved in the uranium mining and milling industry for over 25 years, 12 of which were spent as a resident of Wyoming.

There is no question that the domestic uranium mining and milling industry is depressed. Since 1979, the spot market price for uranium concentrate has fallen, in terms of 1983 dollars, from approximately $70 per pound to a low of $17, before rising slightly to around $24 presently. The numerous layoffs and mine closures which have occurred are well known. Industrywide, employment has fallen in the last five years from approximately 15,100 to under 4,000. In Wyoming, the employment level has dropped from a peak of approximately 5,500 in 1980 to less than 1,300 presently. Approximately 40 percent of those are employed by Pathfinder.

It is thus very appropriate that the first question being considered today is what has caused the current depressed condition of the industry. There are a number of factors which, in my opinion, have converged to create the current situation. Basically, however, the present situation is the result of a rapid decline in demand without an offsetting decline in supply.

Demand has fallen because many utilities have cancelled or significantly delayed plans to construct new nuclear power plants. The reasons for such cancellations are numerous and include a decrease in predicted demand for electricity, increased plant construction costs, uncertainties created by excessive governmental regulation of nuclear power plants, numerous delays in the licensing process and adverse public opinion, which was accentuated by the Three Mile Island incident.

All these factors seemed to take effect at nearly the same time and the result was a very abrupt, generally unforeseen, decline in demand. The effect of the decline was magnified because it came at a time when the domestic uranium industry was rapidly expanding. This was primarily because prevailing and predicted uranium price levels during the mid and late 70's attracted many new companies into the industry. Exploration efforts were intensified, new mills were constructed and mines opened. Very large low cost deposits were also discovered and developed during this time in Australia and Canada.

Further contributing to the decline was the sale by utilities of excess uranium supplies. Because prices were rising and supply was limited during the mid and late 1970's, many utilities increased inventories and made large contractual commitments for future uranium. When those utilities cancelled or delayed plans to construct new nuclear power plants, or needed cash but did not wish to borrow during periods of high interest rates, some began selling their uranium inventories, thus further increasing the available supply at the same time that demand was rapidly falling.

Governmental action has also contributed to the current state of the industry. First, as noted previously, the burgeoning, and increasingly tenacious, morass of governmental regulations applicable to nuclear power plants has deterred many utilities from undertaking new nuclear projects. The increasing delays and uncertainties involved in obtaining necessary construction and operating permits, with the accompanying cost increases, has made many utilities unwilling to undertake the risks involved.

Governmental uranium enrichment contracting policies have also been a factor. As many here today are aware, uranium concentrate must be enriched before it can be utilized as fuel in a nuclear power plant. Domestically, only the Federal Government performs such enrichment work. During the mid 1970's utilities were required to sign a 10-year fixed commitment contract for enrichment services. As its name implies, that contract required utilities to fix the amount of enrichment work to be performed during a 10-year period. Faced with such a contract, utilities attempted to buy enough uranium to cover their 10-year enrichment requirement. This increased demand and prices and contributed to a rapid supply increase.

Additionally, governmental regulations during that time period limited the amount of foreign uranium which could be enriched in the United States. This caused nearly all utilities to seek domestic uranium and made the oversupply worse.

In short, the present state of the industry is largely the result of an imbalance in supply and demand, which stems from a convergence of all the factors I have just described.

Having reviewed what I believe are the causes for why we are where we are, I would now like to discuss the actions which I believe federal and state governments, as well as the uranium industry, might undertake in an effort to improve conditions.

Looking first at the demand side, federal and state governments must act to create an environment conducive to the growth of nuclear power in the United States. One important step in this direction would be to streamline the procedures for licensing new plants in order to mitigate delays and remove the uncertainties utilities now face in the licensing process. At present, both a construction license and an operating license must be obtained. Combining this two-tier licensing process into one could eliminate considerable delay. Overly stringent and unnecessary regulations must be eliminated. Additionally, the federal government must also move ahead vigorously and promptly with its nuclear waste disposal program and states must cooperate in that effort.

State public utility commissions should adopt a more realistic view in rate making matters and allow utilities to include in their rate base construction costs for plants as they accrue rather than forcing the utility to await commencement of operation of a plant. Also, nuclear plant siting decisions must be expedited.

Turning to the supply side, federal and state governments can eliminate what I perceive to be a considerable amount of over regulation on the mining and milling industry. For instance, the federal Environmental Protection Administration recently proposed standards for the reclamation of tailings sites. Despite a lack of scientific evidence indicating that radiation from tailings presents any significant health hazards, the standards as proposed by EPA would, in effect, require that tailings be covered by approximately 10 feet of soil and rock. The cost of complying with such a standard is enormous, while the benefits appear to be minimal or nonexistent.

A further example is the new licensing fee schedule proposed by the NRC. There is no upper limit on the fees which the NRC can charge operators for new licenses or license renewals. This gives NRC staff little incentive to expedite licensing.

Still another example is the amount of financial security which producers are required to post with state environmental agencies as security for the performance of reclamation work. In Wyoming, the amount of such security presently is almost $1 billion. The cost to our industry for providing such security is very high. A reasonable alternative in many instances woud be to allow companies to selfbond for such reclamation obligations.

A fundamental problem underlying much of what we perceive as regulatory abuse is that it is simply too easy to propose and adopt new regulations. The burden is on industry to establish that the regulations are not needed. We believe the burden should be shifted to the administrative agency. That agency should be required to produce significant evidence that the proposed regulations are necessary and economically justified.

Taxation of producers must also be kept within reason. New Mexico has moved in this direction by decreasing its severance tax on uranium.

Before considering steps that industry can take to help, I would like to note that Senators Simpson and Wallop, Representative Cheney and Governor Herschler have all evidenced a desire to extend fair treatment to the uranium industry at the federal and state government level and are to be commended for their efforts.

Industry must help by making every effort to be as efficient and cost competitive as possible. We must endeavor to inform the public of the truth concerning nuclear power and the uranium mining industry. As an example, recently industry was instrumental in forming a group known as the Committee for Energy Awareness. In coming months, that Committee will undertake a major program aimed at bringing accurate information to the public concerning nuclear power.

As a last point this morning, I would like to emphasize that the uranium industry is international in scope. If present projections are accurate, the demand

for uranium by overseas utilities will become an increasingly important market factor in coming years. In fact, within the last several days Pathfinder has reached agreement with one of its customers in the Far East which will significantly extend our commercial relationship. In view of the increasing importance of the international market, we believe that any steps taken to improve conditions within our industry should be aimed at making the industry competitive with foreign uranium suppliers in both domestic and international markets. Measures designed only to protect the domestic industry from foreign competition within the U.S., such as tariffs or embargoes on foreign uranium, could prove to be counterproductive. Foreign utilities might be influenced to refrain from purchasing U.S. uranium. Also, excessively high prices for domestic uranium would increase the cost of operating nuclear plants and cause those plants to be less competitive with other forms of electric generation.

Domestic producers unquestionably face stiff competition from foreign producers. It is a fact that foreign reserves are of generally higher quality than U.S. reserves and production costs are lower in a number of cases. U.S. producers do, however, have some advantages over foreign competitors. We have a better infrastructure to support our mining operations and we tend to have a better reputation for reliability of supply. Efforts to improve the industry's condition might best be expended by concentrating on ways of enhancing such advantages. such as by adopting more realistic federal policies concerning the export of domestic uranium and streamlining the export licensing process. Facilitating extensions of credit by the Export-Import Bank for sales of domestic uranium and nuclear hardware is another example.

Thank you very much for the opportunity to appear today.

THE NEXT URANIUM CYCLE:
STAGNATION OR REJUVENATION?

Frederick A. Groth
President
Cherokee Exploration, Inc.
Steamboat Springs, Colorado

Testimony prepared for a hearing of the Subcommittee on Nuclear Regulation, United States Senate, on the current status and future of the domestic uranium industry on August 29, 1983 in Riverton, Wyoming

For uranium to be classified as a commodity in the classic economic sense, its market activity would have to be cyclical in response to the market drive of supply and demand generated by the business cycle. Unfortunately, in a classic economic sense, uranium has not achieved commodity status, as supply and demand have never been in equilibrium to establish the market. This fact is a key factor in analyzing the present status and future of the industry. In order to analyze where the industry is headed, it is helpful to first examine from where it has come, its present condition, and why critical problems exist.

URANIUM CYCLES

The uranium industry has experienced two production cycles, for simplicity herein referred to as : (1) the A.E.C. cycle; and (2) the first nuclear power cycle. Other than the fact that production and prices went up and down through these cylces they bear little resemblance to ordinary commodity cycles.

In the A.E.C. cycle the market drive was supplied artificially by government needs for weaponry. The price and quantities were more or less arbitrarily determined by the government. When military requirements were met, the market was withdrawn and the industry collapsed. Unfortunately, little valid economic data on market and price response of the industry was obtained during this period. Data of this kind would have been helpful in succeeding cycles.

In the nuclear power cycle, plans for commercial nuclear reactors for power generation ballooned in the 1960's and 1970's and projections of world-wide uranium requirements far exceeded the known assured supply. When no near-term balance appeared likely between

supply and demand, the market drive reverted to fear and greed and uranium prices rose to unreasonable levels as buyers competed for the available supply. All of this occurred in the absence of previous historical market cycle data which would have served to stabilize the industry. The first nuclear power cycle triggered monumental exploration and development efforts. The result of these efforts for the most part in this country was the discovery of normally marginal to non-economic deposits; many of the deposits required high rates of production and/or high market prices to be economic. These deposits represent a large part of the current U.S. uranium reserve.

As the early projections for nuclear power were not realized, uranium requirements dropped drastically. The uranium industry again collapsed beginning in 1979, with an excess of marginal to non-economic reserves, excess production capacity, and large inventories. The market drive had now reversed, it was now driven by greed and fear, and uranium buyers were now to have their way in the market.

TWO-TIERED MARKET

Worst of all the problems of the present uranium market is the effect of inventory overhang from previous production. Excess production capacity could be and was shut down as contracts expired, but much of the accumulated inventory had been produced earlier at lower prices, and was situated in weak nuclear power programs. Soon this inventory began migrating into stronger nuclear power programs at prices which bore no effect of then-current production costs. As inventory spot sales increased, the uranium market became a two-tiered one; the spot market and the primary market. The present difference in prices is dramatic; in the spot market or secondary market, uranium is currently quoted at about $23.00 per pound. In the primary market, comprised of uranium sold under long term contracts with producers, and reflecting current production costs, the current average delivered price is $32-34 per pound. Disparities in these prices in the past two years has at times been even greater.

Prior to the two-tiered market, foreign imports were not a significant factor of the U.S. uranium market. As the spot market price dropped below the marginal cost of production of U.S. producers, the market began being filled with foreign imports, mainly Canadian. Imports reached 83 per cent of new domestic purchases in 1981 and again 83 per cent in the first half of 1982. Foreign producers (mainly the Saskatchewan government) clearly find the two-tiered market to their liking. Interestingly the future imports in general are not at the current low spot price. A mechanism is commonly used by foreign

low-cost producers for future uranium delivery at the then current market price, with a floor price approximating the spot price at the time of contracting. The imported uranium for the most part will be no cheaper than what the domestic industry could produce the uranium for at the time of delivery.

STATUS OF THE INDUSTRY

The net result of collapse of the uranium market following the first nuclear power cycle is that the uranium industry is now "dead-ended". Industry capital is largely tied up in marginal to non-economic deposits and marginal to non-competitive plants and mines. No profit is being generated to finance exploration and development. Industry and investor capital has fled, leaving only those who have competitive deposits and those who cannot recover their invested capital from marginal operations. Significantly, limited development continues on several new discoveries made in the past few years which promise to be highly competitive in the market. These are only vestiges of the last exploration cycle, however, and under the present conditions only delay the eventual deterioration of the ability of this country to supply itself with nuclear fuel at competitive prices.

A strong and robust industry cannot be achieved by returning marginal or non-economic operations to production through artifical market manipulation. To do so would only complicate an already difficult situation by sustaining non-economic producers. The most significant deficiency of the present industry is the virtual total demise of uranium exploration. The only way deterioration of the uranium industry can be stopped in the long run is through the discovery and timely development of new economically competitive deposits. That this can be achieved is not an unreasonable expectation; the continental U.S. possesses a varied and promising geologic terrain, and has not reached a mature state of development. The discovery of the Crawford (Nebraska) and Marline (Virginia) deposits in the past few years bears this out. The question is "Between industry and government, how can the industry be turned around?" This country cannot afford a "dead-ended" uranium industry but no one is currently willing to finance "front-end" uranium resource development.

FUTURE OF THE INDUSTRY

The shape, form and scope of the uranium industry in the immediate future is the easiest to forecast. Everyone analyzing the industry agrees, give or take a power plant completion or two, or a slippage here and there, what the installed and operating nuclear capacity will be over the next twenty years, and the resulting uranium requirements. The result is a gradually expanding market to fuel the completed plants; competition will be keen and

project and company mortality is not over. Cost competitiveness and flexibility in meeting utility requirements are the key ingredients to success in the uranium industry to come.

During the next two or three years the two-tiered market price will disappear due to the liquidation of the uranium inventory overhang. The convergence to a single uranium price market means that prices will reflect then-current production costs at levels which will support substantial domestic production. From this point on, marginal cost of production will control the market and a true economic commodity cycle will begin. Thus the opportunity is clearly defined to commence exploration for new uranium deposits to competitively fill the uranium requirements of a second nuclear power cycle.

Early in the new cycle the existing competitive domestic uranium industry will become largely committed to long-term delivery contracts. The marginal to non-economic producers will still be unable to compete and foreign imports will increase. Foreign ownership of domestic uranium reserves will divert part of our resource from the domestic market. The lack of exploration and development in previous years will begin to show as the cycle develops. The response time of increased production rates to market stimulation during both previous cycles was 5 years, which dictates resumption of exploration immediately if the industry is to return to a healthy condition. In the absence of positive exploration results the U.S. will not only accept foreign imports, but will become dependent on them. The only alternative to this scenario is the discovery of new cost competitive deposits beginning now, and the only source of such deposits is a continuous and adequate exploration and development effort.

VIABLE INDUSTRY

Much has been said about the uranium industry, and for various reasons, including security considerations, that it should be kept in a "viable" condition. The same was said about the oil business to no avail, but following is an opinion of the three resource components of what should constitute a "viable" uranium industry:

(1) A reserve base of economically competitive uranium deposits tributary to existing or planned production centers sufficient to meet minimum utility requirements (say an 8 year forward supply).

(2) A widely based, on-going, industry exploration effort sufficient to replace annual reserve depletion.

(3) A back-up resource of marginal deposits which could be exploited in case of emergency as a hedge against up-side price risks in case of supply failure.

HOW TO GET THERE (VIABILITY)

The answer is clear: the uranium industry must be turned around from a dead-ended industry which is in the process of decay; it must be rejuvenated at the front end of the cycle, accentuating exploration and development. That's where the problem begins; there is not a meaningful domestic uranium exploration effort at this time, nor is their any indication of one beginning timely to fit the coming market cycle.

With their present knowledge, the public does not care whether we become dependent on foreign uranium. Industry and the financial community fear foreign uranium competition and are reluctant to invest in the face of it. The key to solving the uranium industry viability question ultimately rests in attracting capital to finance the high risk, front end exploration and development part of the cycle. In the past when uranium prices and markets warranted, investment in uranium exploration and development was considerable. At the present time the need is not so obvious, the profit not so assured, and the financial community is disinterested. Uranium exploration will resume only when the industry and the financial community is aware of the needs, and the market offers rewards commensurate with the inherent high risk.

In my opinion, one of the problems in attracting investment interest is that at the present time capital is being directed into numerous other investments many of which provide no comparable constructive use of capital. These investments include such tax shelter projects as race horses, time share and condominiums, avacado orchards, cattle feeding, as well as outright "safe-harbour" purchase. The problem is futher complicated by investor preference, which at this time runs to high-tech and medical investments. In addition mining investments currently are predominately in precious metals. One answer to redirecting this capital flow is the re-structuring of tax preference to favor more constructive use of capital, and more adequately rewarding the use of funds in risk and production investments. The uranium industry is not alone in this need; various basic industries requiring capital for expansion, change or modification would also benefit from tax preference restructuring.

Another financial aspect affecting the uranium industry is a history of ineffective application of capital. The industry tends toward complex promotional arrangements where return on equity expectations tend to affect project economics. This category includes high royalty or profit participation by original or previous owners, joint venture arrangements, and multiple financing arrangements. The industry in the future will not be able to bear such burdens.

GOVERNMENT'S ROLE

A key role of government, particulary federal, in aiding the rejuvenation of the uranium industry lies in building better public perception of the nuclear power industry and its role in the future of this country. For example, the following would be helpful:

(1) Improve public perception; publicize successful nuclear power programs. Media publicity is always negative (newsworthy?).

(2) Continue a strong support role in critical problem areas such as waste, licensing, etc. Again publicize positive aspects.

(3) Work for more constructive use of capital and the use of tax preference as a risk investment tool.

(4) Educate the public on the role of nuclear power and the dangers of dependence on foreign uranium.

(5) Monitor foreign imports so that the financial community and the industry can evaluate the possible effects on investments. If imports begin to interfere with rejuvenation of the industry, action may be required.

Many in the industry say: "Limit or stop foreign uranium imports." I do not believe that imports are an issue as yet for the following reasons:

(1) A clear domestic buyer preference for uranium of U.S. origin has been long-demonstrated, due in large part to delivery certainty.

(2) Foreign uranium is not cheap uranium, and is not being dumped.

(3) Marketing inroads by imports begun in 1981 and 1982 due to the pricing strategy in the two-tiered market system will stabilize with the disappearance of the inventory overhang.

(4) In any case, under present industry conditions and in a competitive market, this country will be dependent on foreign uranium by the end of the decade.

STATEMENT OF
C. R. MOORE
MANAGER OF MARKETING
MINERALS DIVISION
GETTY OIL COMPANY
AND
PRESIDENT, GETTY MINERALS MARKETING, INC.

My name is C. R. Moore. I am marketing manager of Getty Oil Company's Minerals Division and president of Getty Minerals Marketing, Inc., a wholly owned subsidiary.

Getty's minerals activities involve the production and marketing of uranium and other minerals within the United States. We also have international exploration programs and minerals holdings, primarily in Australia, Canada and in South America.

Wyoming is a state blessed in natural resources, particularly uranium, coal, and petroleum. Getty has been pleased to be a continuing corporate participant in the responsible economic develoment of these resources and we have a long-standing public commitment to free enterprise and free trade. Getty has been involved in uranium mining and milling in Wyoming for over 20 years -- and like others represented here today -- we have experienced the periodic "boom and bust" cycles which characterize not only this industry but all minerals industries. Like other companies, Getty's investment in these efforts is based on anticipated profits and return on investment, recognizing the inherent risks in the business.

. . .

We are well aware of the gravity of the uranium situation in the United States today. Our Petrotomics uranium mining and milling operations in Shirley Basin are currently functioning at only about one-third capacity. However, I must caution you not to confuse this depressed condition with viability. Even though import restrictions might benefit our own domestic operations for the short term, we believe free market international trade, not trade barriers, is much more in the interests of most Americans, including the citizens of Wyoming.

In a few moments I will specifically address the three questions you posed prior to this hearing. But first I'd like to make some general but brief observations.

Let me emphasize from the outset that Getty's principal concern is that free trade in the uranium industry might be in jeopardy. We firmly believe that protectionism -- whether for uranium or other goods -- is bad for America and that any law which might lead to a form of national central planning is dangerous. We are further concerned that pertinent sections of Public Law 97-415, which is being implemented by the DOE and which is important trade legislation regarding the uranium industry, was enacted with no hearing in the Senate committee with trade jurisdiction and with no hearings at all in the House of Representatives.

In approaching this subject we are in complete agreement with President Reagan's statement at the recent Williamsburg Economic Conference when he said: "We commit ourselves to halt protectionism, and as a recovery proceeds, to reverse it by dismantling trade barriers." Unquote. Further, we are in agreement with the comparable philosophy contained in the National Energy Policy Plan which the DOE presented to Congress in July, 1981, calling for increased reliance on market decisions.

Recent history has demonstrated that the expansion of the government bureaucracy and its involvement in the energy business has been disastrous for America.

If national security were at stake, that would be another matter. But let's consider the argument that our national security is, or will be, threatened in the foreseeable future if the domestic uranium industry continues to operate in a free market. I am convinced that the notion that the importation of uranium poses a potential threat to national security is impossible to sustain.

As we all know, Australia and Canada are the two largest potential sources of low cost foreign uranium. These countries have long been allies of America and can be expected to continue to be favorably disposed toward trade with the United States. It is safe to say that any change in these underlying factors would occur under circumstances which would allow the United States ample time to make adjustments.

Secondly, current privately held domestic uranium inventories represent more than four years of expected consumption. Government owned uranium inventories which are totally ignored by the proposed criteria represent a significant addition to that total -- up to four more years. It should be noted that only 24 to 48 months are required to bring domestic uranium mines currently on standby back to capacity.

And finally, even if we consider the remote possibility of a foreign supply shutoff from our Canadian and Australian trading partners, there need be no major effect on American electricity usage. Nuclear power constitutes about 12 percent of America's total electrical needs. Of course, one might argue that this is significant and any disruption would affect security. But studies have repeatedly shown that U.S. utilities already are sensitive to this possibility. Most utilities have imposed self-determined limits on the amounts of foreign supplies they will import in order to balance their supplies with economic considerations.

IN SHORT, THE NATIONAL SECURITY ARGUMENT CANNOT BE SUSTAINED NOW OR FOR THE FORESEEABLE FUTURE.

I'D NOW LIKE TO SPECIFICALLY ADDRESS THE THREE QUESTIONS YOU POSED BEFORE THIS HEARING.

1. "WHAT HAS CAUSED THE CURRENT DEPRESSED CONDITIONS OF THE DOMESTIC URANIUM MINING AND MILLING INDUSTRY?"

THE PRINCIPAL UNDERLYING REASON FOR THE CURRENT LEVEL OF ACTIVITY IN THE DOMESTIC URANIUM MINING AND MILLING INDUSTRY IS A SIGNIFICANT DECLINE IN DEMAND FOR URANIUM. THIS DEMAND DECLINE CAN BE TRACED TO SEVERAL FACTORS.

FIRST, THE DEMAND GROWTH FOR ELECTRICITY IN NONCOMMUNIST COUNTRIES HAS BEEN LOWER THAN ANTICIPATED. TODAY WE HAVE 55,000 MEGAWATTS (ELECTRIC) OF NUCLEAR POWER OPERATING IN THE U.S. AT ONE TIME IT WAS PROJECTED THAT THE U.S. WOULD HAVE 150,000 MEGAWATTS (ELECTRIC) OF NUCLEAR POWER OPERATING IN 1980. THIS AMOUNTS TO A REDUCTION IN ANTICIPATED DEMAND OF ABOUT 33 MILLION POUNDS OF URANIUM PER YEAR. IT WAS THE TREMENDOUS PROJECTED GROWTH OF NUCLEAR POWER THAT CAUSED THE EXPANSION OF THE DOMESTIC URANIUM INDUSTRY IN THE U.S.

SECOND, THERE HAVE BEEN NUMEROUS CANCELLATIONS OF PLANNED REACTOR PROJECTS STEMMING IN PART FROM THE LOWER ELECTRICITY DEMAND GROWTH AND ALSO FROM GOVERNMENT POLICY DECISIONS BASED ON SAFETY AND ENVIRONMENTAL CONCERNS. IN THIS REGARD IT IS WORTH NOTING THAT THE TOTAL INSTALLED NUCLEAR POWER CAPACITY IN NONCOMMUNIST COUNTRIES IN 1980 WAS ONLY ABOUT HALF OF WHAT HAD BEEN PROJECTED IN 1970.

FINALLY, DEMAND HAS BEEN DAMPENED BY THE HIGH LEVEL OF INVENTORIES HELD BY BUYERS IN ANTICIPATION OF FUTURE DEMAND FOR ELECTRICITY. THIS COMBINATION OF LOWER THAN ANTICIPATED DEMAND COUPLED WITH INVENTORY DRAW DOWN HAS RESULTED IN THE CURRENT LEVEL OF ACTIVITY IN THE URANIUM INDUSTRY. WE CAN ANTICIPATE AN UPSWING IN ACTIVITY ONLY AFTER BUYERS REDUCE THEIR INVENTORIES TO WHAT THEY CONSIDER ACCEPTABLE LEVELS AND THERE IS AN INCREASE IN DEMAND BROUGHT ABOUT BY THE COMPLETION OF NEW REACTOR PROJECTS.

2. "WHAT STEPS CAN BE TAKEN BY BOTH INDUSTRY AND STATE AND FEDERAL GOVERNMENTS TO BRING ABOUT A STRONG AND ROBUST RECOVERY OF THE INDUSTRY?"

AS STATED IN OUR ANSWER TO QUESTION NUMBER 1, THE STRENGTH AND LEVEL OF ACTIVITY IN THE URANIUM INDUSTRY IS LARGELY A FUNCTION OF THE DEMAND FOR URANIUM. THE DEMAND FOR ELECTRICITY AND THUS FOR URANIUM CAN BE EXPECTED TO INCREASE AS THE OVERALL LEVEL OF ECONOMIC ACTIVITY IN THE NONCOMMUNIST WORLD INCREASES. THEREFORE, ANY POLICIES OF STATE OR FEDERAL GOVERNMENTS WHICH PROMOTE A STRONG AND ROBUST ECONOMY WILL BENEFIT THE URANIUM INDUSTRY.

SECONDLY, PUBLIC CONCERNS ABOUT REACTOR SAFETY AND NUCLEAR WASTE DISPOSAL MUST BE SUCCESSFULLY ADDRESSED. WHEN THESE CONCERNS HAVE BEEN DEALT WITH, IT WILL BE POSSIBLE TO BOTH STREAMLINE THE REACTOR PERMITTING PROCEDURE AND TO ALLOW UTILITIES TO PROCEED WITH NEW PROJECTS WITH A GREATER DEGREE OF CONFIDENCE THAT THEY CAN BE COMPLETED THAN EXIST TODAY. THESE EVENTS WOULD OF COURSE CREATE NEW DEMAND FOR URANIUM.

3. "WHAT RELATIONSHIP IS THERE BETWEEN A HEALTHY DOMESTIC URANIUM INDUSTRY AND IMPORTS OF URANIUM FROM OTHER COUNTRIES - AND WHAT STEPS, IF ANY, SHOULD BE TAKEN TO REDUCE CONCERNS RELATED TO IMPORTS OF URANIUM?"

THERE IS NO QUESTION THAT THE USE OF IMPORTED URANIUM IN THE UNITED STATES REDUCES THE DEMAND FOR DOMESTICALLY PRODUCED URANIUM. WHILE IT MAY BE TEMPTING TO CONCLUDE THAT THE ANSWER TO IMPROVING CONDITIONS IN THE DOMESTIC INDUSTRY IS TO RESTRICT THE IMPORTATION OF FOREIGN URANIUM, WE BELIEVE THIS COURSE TO BE BOTH SHORT SIGHTED AND NOT IN THE OVERALL BEST INTEREST OF THE COUNTRY.

THE COST OF PRODUCING URANIUM IS LARGELY A FUNCTION OF THE QUALITY OR GRADE OF THE ORE IN THE ORE BODY. IN THE U.S. WE UNFORTUNATELY HAVE LOWER GRADE ORE THAN IN OTHER COUNTRIES, RESULTING IN A DISADVANTAGE IN COMPARATIVE PRODUCTION COSTS. TO THE EXTENT THAT LOW COST URANIUM CAN BE PROCURED FROM FOREIGN SOURCES, IT IS IN OUR NATIONAL INTEREST TO TAKE ADVANTAGE OF THOSE SOURCES AND TO LEAVE THE HIGHER COST SOURCES IN PLACE UNTIL THEY CAN BE ECONOMICALLY DEVELOPED IN THE FUTURE. SUPPLY DIVERSIFICATION IS A CORNERSTONE OF URANIUM PURCHASING POLICIES THROUGHOUT THE WORLD, AND SHOULD BE A MAJOR POLICY OF U.S. PURCHASERS AS WELL.

IN SUMMARY, THE DOMESTIC URANIUM MINING AND MILLING INDUSTRY HAS CONTRACTED BECAUSE OF DECREASED DEMAND. THAT DEMAND CAN ONLY BE EXPECTED TO INCREASE AS THE DEMAND FOR ADDITIONAL ELECTRICAL GENERATING CAPACITY INCREASES AND AS POLICY DECISIONS ARE MADE WHICH WILL PROMOTE THE USE OF NUCLEAR REACTORS TO SATISFY THAT INCREASED DEMAND. I WOULD LIKE TO REITERATE THAT WE AT GETTY BELIEVE IT WOULD BE A SERIOUS MISTAKE, DAMAGING THE OVERALL WELFARE OF OUR NATION, IF WE FORECLOSE OUR MARKETS TO FOREIGN URANIUM.

FREE ENTERPRISE HAS BEEN THE BASIS OF AMERICA'S PROGRESS. THE REAGAN ADMINISTRATION IS PUBLICLY COMMITTED TO FREE TRADE, AND GETTY SINCERELY BELIEVES OUR NATION AND ALL CITIZENS WILL BE BEST SERVED IF WE ADHERE TO THOSE PRINCIPLES.

I HOPE MY COMMENTS TODAY AND THE MATERIALS WE SHALL SUBMIT TO THE RECORD, INCLUDING A STUDY BEING PREPARED BY REPUTABLE INDEPENDENT ENERGY ECONOMISTS, WILL PROVIDE YOU WITH WORTHWHILE INFORMATION. WE HOPE YOU SHARE OUR CONFIDENCE IN THE FREE MARKET APPROACH.

Riverton, Wyoming
August 29, 1983

Statement presented to the Senate Subcommittee on Nuclear Regulation
Senator Alan Simpson, Chairman.

Introduction: My name is Tom Melrose. I have over twenty three years experience in the mining industry and was Vice President - Mining for UNC-Teton prior to lay off last year. I appreciate this opportunity to submit my personal views on the three basic questions being addressed by this Committee.

1. The cause of the current depressed condition of the domestic uranium mining and milling industry.

In broad terms the situation was brought on by an unsophisticated uranium marketplace which did not properly address supply and demand factors both domestically and internationally. The following are some important contributing factors:

- Failure to estimate the impact of consumer and industry energy conservation in the face of sharply increasing prices and possible shortages.

- Overly optimistic price and demand forecasts with the following results:
  a. Large expenditures on marginal low grade deposits in the U.S. which cannot be exploited in the forseeable future.
  b. Discovery and development of major high grade deposits in Australia and Canada.
  c. Entry of utilities into the exploration and mining business frequently in non-economic situations.
  d. Extensive buying of uranium by utilities and then sales back to producers and to other utilities when high interest rates stressed their financial resources.

- Long delays and monumental cost escalation in nuclear power plant construction as a result of the following:
  a. Utility and contractor mismanagement.
  b. Government regulatory inconsistency and onerous requirements.
  c. Effective antinuclear harrassment of both the utilities and government.
  d. Increasing interest rates during the long delay period.

- Excessive regulatory requirements placed on the mining industry resulting in delays and higher costs and caused by:
  a. A mutually created adversary relationship between government and the mining industry nurtured by environmental and anti-nuclear groups.
  b. Administration and interpretation of regulations by poorly trained and inexperienced regulatory agency personnel.

2.Steps to be taken to bring about a strong and robust recovery in the uranium mining and milling industry.

A strong recovery would be difficult to achieve in our free enterprise economy, because it would require some or all of the following actions.

- Sharply restricting and/or placing a high tariff on imported uranium.
- Government promotion of nuclear power and enjoinment of anti nuclear obstructive actions.
- Dramatically streamlining the licensing and regulation of all activities in the nuclear fuel cycle.
- Government financial support for many nuclear power projects.

An additional limitation may be the decrease in the rate of growth of energy demand resulting from reindustrialization and the high technology revolution.

A modest industry recovery might be achieved by the following actions.

- Voluntary commitment by utilities to purchase a major portion of their uranium requirements from domestic producers. This may result in a two tiered price system which creates other problems.
- Improved licensing and regulation of the nuclear fuel cycle.
  a. Cooperation between state and federal regulatory agencies and the mining as well as other fuel cycle industry segments.
  b. Improvement in hiring and training personnel in state and federal regulatory agencies.
  c. Removal of overlapping jurisdiction and duplication of reporting to the various regulatory agencies.
  d. Encourage technological development by simplifying or removing the rigid process and operational restrictions in NRC mining and milling licenses.
  e. Reduction of delays and added costs resulting from intentional nonsubstantive actions by making the initiants financially liable.

- Adopt one or more acceptable nuclear waste disposal methods and establish an operational disposal site.

- Encourage nuclear power development in areas where acid rain is apparently caused mainly by coal fired power plants.

3. The relationship between a healthy domestic uranium industry and foreign uranium imports.

Australia, Canada and South Africa have adequate uranium resources to supply most of the free world's needs for years to come; however, the possibility of supply interruptions is likely - particularly from Australia and South Africa. For strategic reasons we simply cannot be entirely dependent on foreign sources for uranium and other mineral commodities. If our utility companies do not voluntarily structure their uranium purchases to permit a viable domestic industry, some government action must be taken. Perhaps something on the order of the Nuexco spokesman's suggestion to utilities earlier this year which, if I recall correctly, was purchase 40% through domestic contracts, 40% through foreign contracts, and 20% on the spot market.

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August 26, 1983

Senator Alan Simpson
United States Senate
Committee on Environment and Public Works
Washington, DC 20510

Dear Senator Simpson,

Thank you for your letter of August 10.

I am sorry I cannot be at either your Riverton meeting on Monday 29th or at the EIA meeting in Casper the following day. I just have to be on a trip out of state on those days. Mr. John Coulthard, our Technical Superintendent, will be at the Riverton meeting.

However, most of the Wyoming Mining Association Uranium members, myself included, did get together last week with Bill Rudd to help him put together a statement reflecting our views.

These pretty well coincide with my company's and my personal views. The problem of what to do to bring about a lasting recovery of the industry is indeed difficult. It is not now much use lamenting the then unforseen effects of government intervention in the purchasing of Uranium, and the AEC seven year long term fixed commitment of 1973 which resulted in such high inventories building up at, and still being held, by utilities.

People just need to be better informed about nuclear power and the industry that supplies the fuel. Those who work in the business know that exploiting the nuclear fuel cycle is useful, economical, and safe when properly managed - like many other businesses.

However, the radiation aspect of it and the extent to which it is poorly understood by most people has provided fertile ground for the seeds of fear, often sown and certainly nurtured by groups we all know. The resulting political force affects our regulatory laws and rules many of which are unreasonably restrictive. As so often the weight given to "unreasonable" is the issue, and the contention over that probably can only be resolved by most people, in the end, believing that nuclear power is a good thing. It is very largely industry's job to bring this about. We realize this and we're working on it, but we certainly need help wherever we can get it.

As to the issue of import control, my feelings about it are lukewarm. Many of our companies and of course this country as a whole are in the business of foreign trade - export and import. We should try and keep that trade as free as possible. Here again is a job for the industry to do: the cost of fuel as an element of the cost of nuclear power is very small, less than 10%. Domestic fuel producers should do everything they can to persuade utilities that it is better to rely on ample domestic sources at higher cost than a cheap but unstable foreign sources.

With kind regards.

Sincerely,

Pat Lyons

P.S. Bob Beverly will be at the Casper meeting for us.

PL:ll